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AUTHOR Kirchner, Corinne; Schmeidler, Emilie; Todorov, Alexander
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ABSTRACT

This report discusses the outcomes of a study that examined employment issues for people with serious visual impairments. The study reviewed data from the 1994 and 1995 National Health Interview Survey that included 128,001 people (ages 18-69) with and without visual impairments. Chapter 1 highlights age (seen as lifestage) and health status as critical determinants of the meaning and importance of employment in people's lives and suggests those facts have been surprisingly neglected as analytic tools in research on employment and disability. Chapter 2 reviews key variables relating to vision and disability status, key employment and work variables, and key social and health factors. Chapter 3 focuses on employment status and on "working" as a major life role, comparing people with serious visual impairment to the general public and to people with nonvisual impairments. Chapter 4 introduces employment data for people who are legally blind and compares them to others with serious visual impairments. The next chapter continues the focus on comparisons of people who are legally blind with others who have serious visual impairments. It shows that health and multiple impairments are powerful factors. The final chapter summarizes and discusses major conclusions and implications. (Contains 61 references and 45 tables.) (CR)

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Corinne Kirchner
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Corinne Kirchner
Emilie Schmeidler
Alexander Todorov

with assistance of:
Alistair Furnell

October 1999

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American Foundation for the Blind
11 Penn Plaza, Suite 300
New York, NY 10001
Tel: (212) 502-7661
Fax: (212) 502-7777
TDD: (212) 502-7662
E-mail: afbinfo@afb.org

Rehabilitation Research and Training Center
on Blindness and Low Vision
P.O. Box 6189
Mississippi State, MS 39762
Tel: (662) 325-2001
Fax: (662) 325-8989
TDD: (662) 325-8693
E-mail: rrtc@ra.msstate.edu

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CHAPTER 1

Policy Background and a Framework for Analysis

Policies and Presumptions

"Blindness" defined by a law. "Legal blindness" refers to a definition in the 1935 Social Security Act – the legislation whose landmark status stems from establishing the nation's retirement insurance system, but which also provided for welfare benefits to blind persons (Berkowitz, 1987). Called "economic blindness" in that period (Koestler, 1976), the definition covers a range of visual ability whose specific boundaries were decided essentially through political compromise. In effect, legal blindness embodied the public's assumption that people with very severe visual impairment cannot engage in productive work, at least not at a level that would enable them to be economically self-sufficient. In that view, to be legally blind was to be *presumed unemployed*, if not unemployable. By extension, to be *nearly* legally blind – generally called "severely visually impaired" – was to be of questionable employability.

The very next year – 1936 – the Randolph-Sheppard Act was enacted, providing legally blind persons with privileged access to government property in order to operate newsstand and similar vending businesses (Berkowitz, 1987; Partos & Kirchner, 1986). Thus, that Act presumed blind persons to be capable not only of marginally-productive employment as in traditional sheltered workshops, but of managerial status; at the same time it recognized that societal barriers did not allow them that opportunity.

That the two policies might be considered inconsistent with regard to the presumption of blind persons' employability seems obvious, yet both policy approaches are still in force. In fact, both approaches were pursued by blindness advocacy organizations of their day and still have support, sometimes with misgivings, from most such organizations.

Statistics in policy. But if one considers the presumptions behind these policies in terms of statistical likelihood, and not in terms of absolute statements about severely visually impaired individuals' capability for employment, the set of policies makes more sense. Absolute statements are easily falsified. It takes only one successfully employed, self-sufficient legally blind person to falsify the absolute statement that blind people cannot, on account of their blindness, be economically self-sufficient. Throughout history, individuals demonstrated that capability. However, the burgeoning of industrial society with its heavy reliance on machinery and its depersonalization of employment relations probably stimulated the policy presumption that blindness is, in itself, an employment barrier.

By contrast to the one-case rule that disproves the absolute presumption of unemployability, it takes over 50% of blind working-aged persons to be unemployed in order to support the *statistical* presumption that blind people fit that description. Certainly for the period of the early 1900s leading up to the Social Security Act and continuing almost to the present, even without ongoing studies to document it as precisely as one would like, the evidence has been quite clear that by far most legally blind people of usual working ages have not been employed. (These and subsequent data all refer to the United States, unless otherwise noted.)

Surveys using much broader definitions of visual impairment than legal blindness have shown that only a small minority of those in the usual working ages were employed – in the mid-

1970s, it was less than one-third (Kirchner & Peterson, 1979). However, data from the early 1990s, which refer to people who self-reported "difficulty seeing words and letters in ordinary print, even with glasses on," found the percentage who were employed approached the halfway point (McNeil, 1993).

A new look. And now it can actually be shown that, as of the mid-1990s, within some rather broadly-defined subgroups of legally blind people and especially of other severely visually impaired people, a majority of them *were* employed. For example, focusing on the broad age group of legally blind persons 18 through 54 years old, who reported their health is either "good," "very good," or "excellent," we find that 53% of them were employed. (Those data are presented and discussed in depth in later chapters.)

Admittedly, that subgroup of younger and healthier blind people make up just under one-quarter of legally blind people in the potential working-age span considered here – 18 through 69 years. Furthermore, 53% is only a *bare* majority of that subgroup. However, that statistic was obtained from a major federal study, which interviewed a large, representative sample of the nation's noninstitutionalized population; therefore, it can provide a stronger basis for turning society's assumptions around than even a substantial number of anecdotal accounts of legally blind individuals with successful careers.

Background Purpose and Overview of This Report

Background. "Wasteland" well describes the state of quantitative knowledge about the national employment situation of blind and severely visually impaired people in the U.S. as recently as 1996, when the proposal that led to this report was prepared at the American Foundation for the Blind (AFB). The proposed project was part of Mississippi State University's (MSU) submission to the National Institute on Disability and Rehabilitation Research to renew funding of its Rehabilitation Research and Training Center on Blindness and Low Vision.

AFB and MSU had collaborated before (e.g., Kirchner et al.,1992), and this was a welcome opportunity to mesh strengths on separate but related activities, all pointing toward significantly increasing the fund of research-based policy and practice-oriented knowledge about employment issues that blind and visually impaired persons face.

This report's senior author had participated (along with a cast of thousands, as they say) in the advocacy for and, minimally, in the design of a groundbreaking federal survey conducted in 1994 and 1995, then referred to as "the Disability Supplement" (now, "NHIS-D," explained below). The idea of conducting secondary analysis in that "data goldmine" was a natural for the proposal, especially since the scheduled data-release from 1996 to early 1997 fit the RRTC timeline. AFB called its part of the RRTC proposal "Mining the 'Disability Supplement' to Analyze the U.S. Employment Status of Persons Who are Blind or Severely Visually Impaired." As things turned out, extensive delays occurred in the data release, which was finally completed in July 1998.

Purpose. Of course, before 1996, some rather basic national statistics were available to make estimates of (e.g., prevalence of the working-age visually impaired population and employment and labor force participation rates among men and women) (Kirchner & Peterson, 1979) and a more complex analysis to assess underemployment (Kirchner & Peterson, 1980). But there had never been representative survey data from the legally blind population on employment issues. Furthermore, federal surveys that did gather some measure of severe visual

impairment were never large enough to permit very refined analysis. By contrast, as a 2-year supplement to a large national health interview survey, NHIS-D was expected to yield sufficient numbers of legally blind and other visually impaired persons for analysis, and also promised a wealth of disability-related questions.

NHIS-D offers an enormous variety of nuggets of valuable data that would surface with almost random "digs." But AFB's proposal zeroed in on two specific concerns. The first was in part a methodological issue, although it has substantive interest as well: briefly, we saw a strategic opportunity to use the legally blind sample to extend our critique of a standard survey item to measure "work disability" (or "limitation in work"); the critique is that the measure confounds the impact of physical/sensory impairments with the impact of inaccessible environments to explain why some people cannot work (Kirchner, 1996). That analysis now appears in Chapter 4 of this report.

Secondly, we proposed to conduct an analysis that would correct a seemingly important lack of attention to a lifespan perspective (considering age, career stage, and age-at-onset of visual impairment) as critical to understanding widely different employment issues for subgroups of the blind and visually impaired population.

To our amazement, when we finally could sit down to peruse the truly mammoth codebook of NHIS-D (not all questions were asked of each person!), we learned that age-at-onset had been obtained only from part of the sample, and that did *not* include people with visual impairment. However unfortunate (and still hard to understand) that oversight was, we have been able to move far along the path of a lifespan analysis, with more than enough insights along the way that yield practical implications now, and raise focused questions for future research. We have done that while using *current age* as the main analytic framework, as is set forth shortly.

In the early stage of analysis and our ongoing review of relevant literature, *health status* emerged as the second key factor to examine. The reasons for the late appearance of health as an operative concern in the employment services arena, and the rationale for its importance, are also set forth later in this chapter.

Overview of this report. As just indicated, the remainder of this chapter presents the framework of the analysis. It highlights age (seen as lifestage) and health status as critical determinants of the meaning and importance of employment in people's lives, and suggests those facts have been surprisingly neglected as analytic tools in research on employment and disability, specifically referring here to people with serious visual impairment.

(The operational definition of "serious visual impairment" for this study will be discussed in detail in Chapter 2. For now, it suffices to say that it refers to reports by people in a survey interview that they, or the household member for whom they are responding, have "serious difficulty seeing" even with glasses on if they usually wear glasses. The definition includes people who are legally blind and, among them, those who are totally blind.)

Chapter 2 explains the methods of this analysis. It begins with a decidedly non-technical overview for the reader who just wants to get into the meat of the report, but realizes there also has to be a bun to contain it — that is, some explanation of what we did — or else following the line of analysis will be a messy process. Even the "technical" review is not highly technical, but gives more detail.

Chapter 3 takes the broad view. It focuses on employment status, and on "working" as a major life role, comparing people with serious visual impairment to the general public (i.e., people with no serious impairments) and to people with impairments that are nonvisual in nature.

The analysis demonstrates the importance of age for employment, and also considers age in relation to other social characteristics – gender, race/ethnicity and education.

Chapter 4 zeroes in on people with serious visual impairment; it introduces data for people who are legally blind and compares them to other people with serious visual impairment. This chapter puts an intense light on aspects of employment: full-time *versus* part-time; short-term transitions into and out of employment; self-perceived limitations in ability to work; and other aspects.

Chapter 5 continues the focus on comparisons of people who are legally blind with others who have serious visual impairment. It brings in the health-related issues, using two quite different indicators – general health status, and presence or absence of impairments in addition to the visual impairment. This chapter shows that health and multiple impairment are powerful factors in themselves, and goes on to reveal the added understanding that comes from looking at age and health together, as well as general health and multiple impairment together.

Chapter 6 summarizes and discusses major conclusions and implications. It is brief. Just as we have placed our literature of review strategically throughout the report as relevant, rather than segregated in a separate section, we have also presented implications of findings where they can be best understood in context.

Therefore, in Chapter 6 we highlight a few key ideas for the reader to take away after a first reading. We trust that Chapters 3-5 contain enough data of interest and practical use to researchers, policymakers and practitioners that they will refer back whenever they consider sorely-needed innovative approaches to problems in the employment situation of *some* – by no means all — people with serious visual impairment.

A Framework for Analysis

Data source. The employment rate of young, healthy legally blind people presented above comes from the National Health Interview Survey, Supplement on Disability (NHIS-D). Conducted in 1994 and 1995, and released ***in toto*** for public use in mid-1998, NHIS-D is remarkable for the type and amount of data it collected on employment status and related characteristics of people who are blind or severely visually impaired. Chapter 2 describes pertinent features of that source of data with special attention to how the key variables used in this analyses were defined and measured.

This is an early report from NHIS-D which, as a nationally available dataset, undoubtedly will yield many future analyses by the present authors and others. Although our scope is rather broad, focus is necessary. We have not yet sorted through the whole mass of background, attitudinal and service factors of potential relevance to the employment picture of people with visual impairments. We began by looking at the major background factors that affect employment in the general public and assessed their influence among the subpopulation who are blind or visually impaired. We will report on several of those factors, but focus on two of them. Those two, taken alone and together, reveal a truly powerful impact on employment status.

The main story. To look ahead to the main story that will unfold in the following chapters, the two key protagonists are *age* and *health status*. How we view those factors and how they can be dealt with in drawing policy and practice implications from this research are the plotlines of the story.

By zeroing in on groups of people with serious visual impairments for whom the statistical presumption actually tips the other way from traditional unemployment, we provide glimpses of the day in the future when the safest bet in designing policy and programs affecting blind people as a group will be: "Presumed Employed." By the same token, we will be showing what social factors are implicated in limiting the employment of other people with serious visual impairments.

Age: The Life-span Telescope

On reflection, it is surprising that the employment problems of people with serious visual impairments, or for that matter, people with any serious impairments, are often discussed without making a fundamental distinction between younger and older persons. A recent book begins to change that picture. Quinn's (1998) *Understanding Disability: A Lifespan Approach* offers a useful descriptive account of lifestage challenges for people born with various types of impairments. But Quinn's effort still by-passes the important issue of how the meaning of living with impairments is altered by the lifestage at which onset occurred. More on that later.

An analytic tool. Speaking analytically, age is an indicator of two kinds of socially-structured processes:

(1) The "lifestage" process, which refers to differences that individuals experience as they grow older and move through life stages that are defined by societal norms. For example, as people age, their earnings typically move upwards to a "career peak."

(2) The historical or "generational" process, which refers to differences among people of different ages that reflect their birth into and growth through different historical periods. For example, the current generation of youngsters, when they reach their 60s, will certainly be much greater users of computers than today's generation of 60-somethings who are always playing catch-up in those skills because they were not born into the "Computer Age."

As different as the lifestage and historical processes are theoretically, it is not possible to separate their influence when relying on data collected at only one period in time, such as we have available. Nevertheless, when it seems appropriate in the analyses below, we will speculate which type of process accounts for observed differences between age groups.

Substantive aspects. Now speaking substantively, why do we expect age to have a powerful impact on visually impaired individuals' employment situation? There are many reasons, some drawn from knowledge of employment issues for the nondisabled population (U.S. Department of Labor, 1995), others having distinctive relevance for people who have serious impairments, visual or other. An overview will be sketched here; detailed points will arise in later chapters when we present the data.

Consider first the perspective of the typical individual in the U.S. aging through stages of life. The meaning of work and the prospects for jobs within a lifespan framework can be assumed to look as different as does any vista viewed from the different ends of a telescope. In that sense, age is being used as an indicator of lifestage or for present purposes, career stages. (Note: The term "career stage" is used here in a neutral sense, not necessarily with the narrow meaning as a pattern of increasing responsibility and rewards from work.)

Looking at employment from the "younger end." – One's lifestyle is, at this stage, still in formation. Employment decisions will affect one's life course for decades, interacting with other major roles in family and community life that are also in development. Depending heavily

on one's social class, the outlook is for greater or lesser achievement through employment, especially in terms of earnings but also, in terms of cumulative development of skills and of recognition. For many in poverty or otherwise disadvantaged, the challenges of basic role-demands may be so overwhelming and employment prospects so dismal, that other routes to subsistence are pursued, notably welfare. But even for them as younger persons, there is always the *potential* of earnings from working.

And from the "older end." Shifting to looking at employment from the "older end," options are or seem limited, largely obscured in the shadows cast by earlier experiences. Retirement as an option begins to outweigh the possibilities of identifying new career paths and learning new marketable skills. It is significant that when policymakers established SSDI (Social Security Disability Insurance) as an income benefits program in 1956, they designed it for workers who became disabled after reaching the age of 55. The program was known as a "premature retirement." program from which beneficiaries were not expected ever to return to the labor force (Batavia in Rupp & Stapleton, 1998).

In sum, using this framework makes clear that issues around seeking or retaining jobs are fundamentally different for people, regardless of impairment status, at the early *versus* the later phase of their lifespan.

Age and age-at-onset. However, for those who do have serious impairments, the age effect is compounded. That is because most older people with impairments, especially visual impairments, acquired them along with aging. As newly disabled older workers – especially those with visual impairment – they face the need to learn an array of specialized skills for daily functioning, not to mention in order to carry out work tasks. By contrast, for younger people with serious impairments of any type who enter the labor force, it is likely that they learned basic adaptive skills along with their general education. (Note: This point is a relative statement. That is, people who were blind while getting their basic education are more likely to have gained disability-specific skills than persons who developed blindness late in life, although even under the "IDEA" [Individuals with Disabilities Education Act], many younger persons lack adaptive skills because the specialized teaching they needed was not available in their public schools.)

The critical factor here is age-at-onset – more precisely, career stage-at-onset – of the impairment. It is a surprising shortcoming of NHIS-D that it did not inquire about age-at-onset for all persons who reported sensory impairments. (Age-at-onset was obtained for some other subgroups.) The omission is not a great concern to us in regard to the 55+ group, for most of whom we believe it is safe to assume their serious visual impairment emerged after they had been in the labor force for decades. Similarly for people near the 18-year-old end of the lifespan perspective, the assumption of early onset is safe. But that still leaves a large middle group for whom it would have been desirable to contrast employment issues of those with onset of impairment before they entered the labor market and those with later onset. That is certainly a priority for future research design.

Age and education. Age may have an *indirect* impact on employment. The major example is generational change in educational attainment. The average level of educational attainment in U.S. society has been increasing for decades, as has the level of education that employers require for hiring. As recently as 1960, for example, among people 25 years or older, only 41% of the total population had completed at least 4 years of high school, including 7% who had completed 4 years of college or more. By 1996, the first figure had doubled and the second had more than tripled: in the later year, 82% of people 25 or older were high school

graduates, including 24% who had graduated from college, many with additional schooling (U.S. Bureau of the Census, 1997, p. 159).

The raising of the educational bar for labor force participation is also evident, even in the shorter span for which those data are readily available: whereas in 1970, 26% of the labor force had at least 1 year of post-high school education, in 1990, the same figure – 26% – was accounted for by college graduates, and fully 47% had at least 1 year of post-high school education (U.S. Bureau of the Census, 1997, p. 399).

Thus, lower employment rates among older people than younger ones in part reflects lower educational levels attained by the former. However, it may be that even when we examine employment rates for older and younger people at the same levels of educational attainment, the young have an advantage because the *content* of their education is more in tune with current labor force needs. It is in response to that kind of generational effect, at a time of remarkable growth in knowledge, that the phenomena of lifelong education and routine on-the-job training are taking root (U.S. Department of Labor, 1995).

Age and other social characteristics. Although everyone's path through career stages is unique, there are regularities based on society's norms – and prejudices – about other social characteristics that affect employment roles. Gender stands out in that respect. It is widely recognized that dominant societal norms in the U.S. have been changing drastically, moving toward the expectation that women should participate in the labor force (Smith and Bachu, 1999). This historical change regarding women's employment will surely show up in the data. However, mixed in with it and working in the opposite direction (i.e., younger women less likely to be employed) will be age differences in employment that reflect women's moving through phases of family life, with some segments of society still opposing the idea of mothers with children at home working for pay, especially in ethnic subgroups closer to their traditional norms.

To a lesser extent and for different reasons, we expect to see employment effects of race-ethnicity, apart from gender roles. Race-ethnic patterns may be age-related, reflecting generational effects of the Black civil rights movement and related non-discrimination legislation of the 1960s (Kirchner & Schmeidler, 1999).

Those broad expectations regarding age, gender and race-ethnicity are derived from knowledge of the general public's labor force patterns. A body of research by Yelin and associates has gone a considerable way toward filling in the picture for people with disabilities in general (Yelin, 1992; Yelin & Katz, 1994). But we know very little about how all of those characteristics, and particularly the age factor that is central for this report, operate among working age persons with serious visual impairment.

We turn next to the health factor. Poor health as a stereotyped correlate of aging often overwhelms laypersons' (including employers') perceptions of aging, but the other extreme also applies: the impact of health issues has remained lurking in the background of most rehabilitation field discussions of the employment of people with disabilities (including for that matter, in our own work – see Kirchner and Peterson, 1979, 1980).

Bringing Health Back In

"Medical Model" as a barrier. Analysts and advocates continue their decades-long uphill struggle to overcome the *non*medical barriers people with disabilities face in all arenas of societal

participation. Nowhere has this message been harder to convey than in relation to employment where the very term "disabled" is defined in some contexts – notably Social Security income benefits – as synonymous with inability to be employed *because of* a medically determined condition (i.e., the "medical model" of disability) (Rupp & Stapleton, 1998).

Passage of the Americans with Disabilities Act (ADA) in 1990 was a watershed in policy recognition of the nonmedical barriers to employment (Young, 1997). Even though most supporters of ADA view it as at best a partial and threatened solution to both individual and institutional discrimination on the basis of impairment, there are signs that its existence has allowed many supporters to let go of a dogmatic rejection of any issues that even hint of "medical model."

Many of the same advocates and analysts are recognizing privately and to a lesser extent publicly, that the long struggle had created a pendulum effect. In the interests of showing that impairments do not *inherently* create work limitations, they went to the other extreme: denial of medical aspects of impairments, or even unrelated medical events, that might create problems at work at least *some* of the time for *some* people with disabilities.

The pendulum swings. Health insurance and health care have emerged on the disability activists' policy agenda. A 1996 "Summit" of grassroots and national disability activist leaders placed health issues on a par with their watchword nonmedical issues (e.g., civil rights and transportation). They recognized that all those issues, while important in their own right, also are critical as barriers or facilitators to employment (National Council on Disability, 1996).

Furthermore, current research on the disincentives to leaving SSDI and SSI disability rolls has identified loss of medical coverage as a more significant deterrent than loss of income benefits (Mashaw & Reno, 1996; Wunderlich, 1999, p. 83).

The still-evident need to disavow a medical model of disability issues is one factor in trying to explain the rather surprising continued lack of attention to clients' health status in the vocational rehabilitation (VR) literature generally. What other factors might be at play?

The VR context. One factor reflects the division of labor in the rehabilitation system: VR is formally defined as the process that begins *after* medical/surgical interventions have done as much as possible to remediate the impairments. Therefore, even though medical services in fact do absorb a portion of public VR dollars and of clients' time, the service category covering those expenditures does not include any terms like "illness," "health" or "medical" – it is called "physical restoration." Nor does use of medical services typically enter into analyses designed to understand employment outcomes of VR.

It is also likely that most people with impairments who are debilitated for frequent and/or long stretches of time by pain and acute phases of chronic illness simply do not seek VR and, thus, are not given attention in designing or evaluating programs and outcomes. While that exclusion is understandable, it is surprising that people who are in such poor health are generally not considered as legitimate exceptions in exhortations to raise the employment rate among people with disabilities.

Objective and Subjective Health Status

Multiple impairments. There is a partial exception to the critique just outlined. Many analysts do pay attention, both in their statistics and in program planning, to the common phenomenon of multiple impairments. Prevalence of multiple impairments among people with

any one type of impairment is generally estimated at between half and two-thirds – an estimate that obviously depends on how broadly or precisely impairments are defined and grouped.

The potential significance of multiple impairments for understanding employment issues is complex. *First*, multiple impairments might be viewed as indicators of greater severity of disabling consequences; however, it is possible that certain single impairments are more disabling than certain combinations of nonsevere impairments. *Second*, multiple impairments can be seen from a rehabilitation perspective: even if one or more of the combined impairments are not severe, the specific combinations might make certain rehabilitation techniques ineffective. For example, even mild hearing loss greatly complicates O&M training for blind people.

Third, multiple impairments also can be viewed from the perspective of whether they are causally-related to each other, or only coincidentally converge. That is primarily an epidemiological research concern aimed at better prevention of conditions that are "secondary to" another condition (Pope & Tarlov, 1991).

Fourth, whether or not multiple conditions are causally related, the fact that individuals have multiple impairments is likely to indicate they also have poorer health status in the sense that mainly interests us here – that is, when illness, pain or weakness on an acute or chronic basis absorb individuals' time and energy to the detriment of their participation in employment. When this aspect is the focus, multiple impairments typically are called "co-morbidities" (Rice & LaPlante, 1992).

Although poor health is more likely among people with multiple than single impairments, it is important to avoid the same "medical model" assumptions in relation to multiple impairments as have been well articulated for single impairments. Just as a healthy blind person may have activity limitations that reflect environmental barriers rather than inherent limitations of inability to see, the same reasoning may apply to a person who is both blind and deaf, or both visually and orthopedically impaired, or any other combination.

General health status. To bring health back in to the analysis in the most pointed way, we seek a measure that captures the debilitating conditions of illness – notably pain, weakness, fever – that absorb one's attention to the exclusion of other activities. NHIS-D offers a few indicators, discussed in Chapters 2 and 5. But the best tool is a question that asks for an overall assessment of one's health, using a range of options from excellent to poor. "Perceived health" has been found in many studies to be as effective or more so in predicting current and even future objective health status (Ferraro & Farmer, 1999).

In the analysis to follow, we will examine employment issues for people using their assessment of health status, and according to whether they do or do not have serious impairments in addition to their vision impairment.

CHAPTER 2

Methodology

What The Non-Technical Reader Needs To Know About The Methods

Where do the data come from? The data are from the 1994 and 1995 National Health Interview Survey, conducted by the National Center for Health Statistics, a federal agency, with specially trained Census Bureau interviewers. The very large sample is selected so that it represents everyone in the U. S. who lives in a household (or is a college student living away from home); that means it excludes people in institutions such as nursing homes or prisons or in the military. This report uses three parts of the survey: the Core, made up of questions asked every year; and Phase 1 and Phase 2, which comprise the Disability Supplement.

How big is the sample? The Core and Phase 1 were asked of everyone in the sample. We include only the people who were 18-69 years old —128,001 people over the 2-year study. Phase 2 questions were asked about a year after the first interview to the 18,577 people whose answers to the Core and Phase 1 met criteria that indicated they were likely to have significant health problems or impairments. The 1,603 people who reported serious visual impairment in Phase 1 were included in Phase 2; of them, 334 were legally blind.

What kind of statistics do we look at? To analyze the data, we mainly use percentages from cross-tabulations that contrast different groups; for instance, what is the employment rate of people with impairments compared to people without impairments? What is the employment rate of people who are blind compared with others who are severely visually impaired? We concentrate on differences of 10% or greater, and especially on large differences — 30% or larger — because of their possible significance for policy.

The results are presented in non-technical language using percentages and in accompanying tables. In the Appendix, the interested reader can find corresponding tables that show the sample size for each specific table (called the "not weighted base") and the projected number of people in the U.S. who have the characteristics shown in the tables ("weighted base").

When we make comparisons between subgroups, we sometimes run into a problem: the number of people in the sample is too small. If the sample has fewer than 20 people in a subgroup, we do not report percentages for that subgroup.

How to know what is <u>really</u> going on. Some of the factors (or "variables") we look at are defined in ways that are quite obvious, such as gender; some less so, such as race/ethnicity. Some may mean something a bit different to the reader from the detailed meaning we gave to the label on the basis of the specific questions we used to measure the factor, for example, "interest in work" or "receipt of vocational rehabilitation."

To keep tabs on what each variable means, we have created a reference chart, found at the end of this chapter. For ease in looking up variables, we listed them alphabetically. The right hand column gives the variables and its categories. In the middle column, we have indicated the more general concept that the variable is designed to measure. Finally, in the far left column, we have provided the wording of the questions from the survey, and, when necessary, a description of the way we coded responses to make the categories.

What kinds of questions were asked? The Core and Phase 1 collected extensive information about health conditions and impairments as well as background information.

Everyone was asked standard questions about being employed or looking for work. Phase 2 is particularly valuable for understanding the relation of people with disabilities to employment because that interview went well beyond the standard questions. It also asked, for instance, whether people with disabilities needed accommodations in order to work, and, for those who were employed, whether they had the accommodations they needed. Each person also was asked whether he or she had received vocational rehabilitation services or disability-related benefits.

This report uses selected questions relating to:

- vision and disability status;
- employment and work; and
- social and health factors.

Readers who are interested in a more detailed description of our methodological choices and decisions about specific variables will find that information in the sections that follow. Others may want to skip the remainder of this chapter and go directly to the substantive discussion in Chapter 3.

Technical Review

Data source: NHIS-D. Each year the National Center for Health Statistics (NCHS) conducts the National Health Interview Survey (NHIS) with a nationally representative sample of households in order to describe the civilian non-institutionalized population. Each survey is comprised of the Core section that remains the same from year to year, and one or more sections that change periodically. The 1994 and 1995 NHIS included special questionnaires on disability. We use the NCHS' designation "NHIS-D" to refer to the Core and the two disability supplements, Phase 1 and Phase 2 (adult questionnaire).

Data for the Core and Phase 1 are collected for the whole household. While an effort is made to have all adults answer for themselves, where this is not feasible, knowledgeable adults serve as proxies to provide information about other household members. For Phase 2, which focuses entirely on people with disabilities, a much more strenuous effort is made to have people provide information about themselves; proxies are used when that is the only way to conduct the interview.

Content of Core and Phase 1. The Core contains a wide variety of measures of health-related and background information, such as demographics and household composition, that are used to interpret the data. Phase 1 contains questions about impairments, functional limitations, activities of daily living (ADLs) and instrumental activities of daily living (IADLs), mental health, a dozen specific conditions (such as spina bifida and autism), and whether the person perceives, or others perceive him or her, to have a disability. Other Phase 1 questions ask about receipt of services and benefits.

NHIS-D disability screen. Questions from the Core and Phase 1 were administered to the whole sample. Questions from the Core and Phase I were used as a "screener" to identify people eligible to participate in Phase 2, which focuses entirely on the experience of people with disabilities. Phase 2 was administered about 1 year after the Core and Phase 1. (Phase 1 interviews were conducted during 1994 and 1995. Phase 2 interviews began 6-8 months after the Phase 1 interviews; they all were completed by early 1997.)

No single, overarching conception of disability or impairment was used to screen people into Phase 2. The federal government uses 43 different definitions of disability; 13 federal

agencies (and the Robert Wood Johnson Foundation) collaborated in funding NHIS-D so they could have data to fulfill their mandated responsibilities. The study was designed to allow researchers to use the data to answer quite different questions. As a result, people were included on the basis of widely diverse criteria, such as having specific conditions or impairments; activity limitations, ADLs or IADLs; receiving or applying for benefits, etc.

Content of Phase 2. Phase 2 contains extensive questions about the disability experience. We concentrate on the work history and employment section. Phase 2 also contains sections on housing, transportation, social activity, family structure, vocational rehabilitation and other services, assistive devices, health insurance, impairments and functional limitations, ADLs and IADLs, special education, and health opinions.

Method of Analysis

Significant differences. This report is a preliminary analysis of employment issues among people with severe visual impairment. We rely primarily on cross tabulations, calculated using SPSS for Windows version 9.0. We look at percentage differences in terms of their potential policy implications. We do not measure statistical significance because, with the large numbers included in this study, even small differences are likely to be significant statistically (meaning they are likely to be reliable and so to occur in different samples drawn from the same population). Small differences, even if statistically reliable, are insignificant with regard to policy.

Guidelines for interpreting percentage differences. We do not call attention, in general, to differences that are smaller than 10% because, as just noted, they are a weak basis for policy decisions. Setting a threshold of importance for policy, and identifying at what points to call attention to findings of greater policy importance, are "judgment calls" based on convention unless, ideally, theory or experience provide compelling alternatives. Cohen (1969) has suggested conventional cutting points for "small" "medium" and "large" effects when using *standardized* effect sizes (i.e., taking into account the location of percentages differences in the possible range of 0 to 100%). We have applied Cohen's method and criteria to the data herein, but mainly refer to the easier-to-understand guidelines noted next. The conclusions one would reach about which findings are noteworthy turn out to be the same whichever technique is used in almost every case. We identify in the text the instances when the standardized effect size crosses Cohen's threshold of being noteworthy even though the raw difference is below the non-standardized threshold of 10%. To be specific, for the non-standardized data, we use the following criteria:

- Differences between 10% and 20% are noteworthy but "small" or, at the high end, "moderate."
- Differences of 20% up to 30% are described as "large."
- Differences of 30% or more are described as very large ("striking" or "remarkable").

Logistic regression analysis. Although our presentation is mainly developed through a series of cross-tabular analyses, in the closing section after all the main variables have been introduced, we also present our findings in a set of logistical regression equations. These enable us to see the relative impact of each variable when everything else is factored out.

Key Variables: Vision and Disability Status

Serious visual impairment status. Our criteria for identifying people with serious visual impairment are set by policy and methodological considerations. From a policy perspective, the distinction between being legally blind or not, no matter how severe one's visual impairment, is important. We should like to be able to analyze separately people who are totally or near-totally blind, but the sample number would have been too small and the question was not even asked as such. Methodologically we use the Phase 2 data, so our criteria must be compatible with the NCHS screening criteria.

Phase 1 includes a short series of questions about vision. The first question asks whether anyone in the household has "SERIOUS difficulty seeing even when wearing glasses or contact lenses." Follow-up questions for those who do have serious difficulty seeing ask, first, whether the person is legally blind; and, for those who are not legally blind, whether the person expects "to have SERIOUS difficulty seeing, for at least the next 12 months." People who either are legally blind or have serious difficulty seeing expected to last at least 12 more months are included in Phase 2. (People with serious difficulty seeing *not* expected to last 12 months are not included in Phase 2 on the basis of their vision, although about two-thirds of them are included on the basis of other disability criteria.)

We designate those who are legally blind or have serious difficulty seeing that they expect to last at least 12 months as having "serious visual impairment." For some analyses, we distinguish between those who are legally blind and those who have serious difficulty seeing, but are not legally blind ("other visually impaired"). Phase 2 included 334 people who are legally blind and 1,269 other visually impaired people.

Impairment status. The impairment status variable has three categories. One group is comprised of people with "serious visual impairment." Another group is people with "serious non-visual impairments." This group is comprised of people who do *not* have serious visual impairment but screened into Phase 2 on the basis of other, comparably severe, impairments. The final group is the "general public" (people with no serious impairments). It includes all the people who did not screen into Phase 2 (109,424) plus the much smaller number of people (4,138) who did not fit our criteria for either "serious visual impairment" or "serious non-visual impairments." We treat this group as having no serious impairments although we recognize that a relatively small number may, in fact, have significant impairments.

Chapter 3 describes the social characteristics of people with serious visual impairment and contrasts their characteristics with those of the two groups of people without serious visual impairment.

Multiple impairment status among people with severe visual impairment. In Chapters 4 and 5, we examine in more detail the characteristics of people with serious visual impairment. To do so, in Chapter 4 we distinguish between those who are legally blind and those who are not. In Chapter 5, within these two subgroups, we contrast those whose only serious impairment is visual, and those who have one or more other serious impairments as defined by "Impairment Status," above. Since all these people have serious visual impairment, those who also have other impairments have "multiple impairments." These analyses are limited, however, because of the sample size. Since the number of legally blind people is relatively small, we are restricted in the extent to which we can analyze them by subgroups. Thus we are able to analyze them by age or by multiple impairment status, but not both simultaneously.

Constructing the impairment status measure. After formulating the vision status variable, we sought to create an impairment status variable that would identify people with impairments as comparable in severity as possible to serious visual impairment. NCHS's criteria for including people in Phase 2 on the basis of their visual impairment is that the people had to have *serious* (emphasis in the interview question) difficulty seeing, and either expect this to persist for at least 12 more months, or be legally blind. Therefore, as much as possible, we used severity and duration as criteria for serious impairment.

(An alternative would have been to use everyone in Phase 2 who did not have serious visual impairment. We chose not to do so because people screened into Phase 2 on very diverse criteria. We did not, for instance, include people who reported having poor health or having applied for benefits, but did not meet any of our criteria, even though either of these was sufficient for screening into Phase 2. Of the 18,577 people aged 19-69 who screened into Phase 2, 1,603 have "serious visual impairment" and 12,836 met our "serious non-visual impairments" criteria. We treat the remaining 4,138 as part of the "general population." We plan to re-do key analyses with alternative criteria thus testing the sensitivity of our conclusions to these classification decisions.)

We used severity and duration to select among the various conditions, impairments, and limitations in Phase 1, Parts A-E. *Within* each part, fairly comparable information is collected. However, *across* the different parts, the information varies (including information about severity and duration). Below, we describe the decisions we made for each part. For details about coding for this variable, contact the authors.

Part A: Sensory, communication and mobility impairments. Most questions specify both severity and duration. (For some impairments, the person was asked whether the problem had lasted for 3 months, but not whether it was expected to persist.) We included all those who met the duration criterion, except those who had difficulty with taste or smell, because we thought these unlikely to impact employment.

Part B: Conditions. Questions cover whether the person has any of a dozen conditions, but do not inquire about severity or duration. Duration is not an issue since these conditions (e.g., cerebral palsy, Downs syndrome) are lifelong. Severity is an issue; but faced with the choice of accepting or rejecting all these conditions, we included them all.

Part C: ADLs and IADLs. We included everyone who reports "has difficulty," "needs help," or "uses special equipment" to perform an ADL or IADL, *and* who expects this to continue for at least 12 months.

Part D: Functional limitations. People who say they have difficulty with a specific action are asked how much difficulty they have: "some," "a lot," or "completely unable [to do it]." Unfortunately, only those who said they are "completely unable" are asked whether they expect to remain unable to do it for at least 12 months. We would have preferred to include those who have "a lot" of difficulty and expect the difficulty to persist. Having to choose between severity and persistence, we chose to include only those who are, and expect to be, unable to carry out the action for at least 12 months.

Part E: Mental health. This section includes two types of questions — those dealing with behaviors and with named conditions.

a) For *behavioral* problems (e.g., being frequently depressed or having difficulty getting along with people), the person is asked whether the problem seriously interferes with working, attending school, or managing day-to-day activities. (People were not asked how long they have

had the problem nor whether they expected it to persist.) We included those who said the problem did interfere seriously.

2) For *disorders* (e.g., schizophrenia, or Alzheimer's disease), people are asked whether they had the disorder for the past 12 months. We included all those who met this criterion.

Key Employment and Work Variables

NCHS measures work and employment in several ways. Each of them is interesting in its own right, and the several measures together are interesting for their contrasting perspectives.

Major life role. The broadest question is in the Core. Each person is asked what he or she was doing most of the past 12 months: working at a job or business, keeping house, going to school, or something else. Unfortunately for our purposes, those who answer "something else" were not asked follow-up questions to explore what the person *was* doing.

Current employment. In the Core, in addition to being asked about their major activity, people are asked whether they worked at a job or business at any time during the 2 weeks preceding the interview. Follow-up questions for those who were not working during that period include whether they had a job (e.g., they had not worked because they were on vacation, were sick, or were on layoff). People who have a job or work in a business are considered employed. These questions provide current employment status for people at the time that the Core and Phase 1 were administered, which we call "Employment (Phase 1)."

People who screened into Phase 2 were asked the same set of employment questions as of that time. We call this "Employment (Phase 2)."

These two sets of questions, collected approximately a year apart, allow us to examine employment from slightly different perspectives. They give one indicator of continuity of employment. They also permit us to ask whether people with "serious visual impairment" are more likely to move into or out of employment by comparing those employed in one year and not employed in the other. However, because the two measures were taken only several months or about a year, we cannot say anything about longer term patterns.

NCHS designed the detailed questions in Phase 2 to create 16 work status subgroups each of which followed its own skip patterns through the Work History/Employment section. For our purposes, broader groups (working, not working currently, and never worked) are usually sufficient. However, certain critical questions, described below, are asked only of specific work status subgroups. The subgroups are constructed on the basis of several factors: *First*, whether the person has never worked, is working currently, or is not working currently; *Second,* for people who are not working, whether the person is retired or is looking for work; *Third,* whether or not the person states that he or she is prevented or is limited in working, by health problems, impairments, or disabilities; *Fourth,* whether or not the person says he or she could work if accommodations were made; and *Fifth,* whether or not the person identifies special equipment, assistance, or arrangements he or she needs to do the job.

Labor force status. The Core/Phase 1 and Phase 2 Employment questions also ask those who are not currently working whether they are looking for work. These questions together enable coding by labor force status. People are in the labor force if they are employed or, if they are not currently employed, if they are on layoff or looking for work. People are not in the labor force if they do not have a job and are not looking for work. This approximates the standard definition used by the Bureau of Labor Statistics.

Full-time and part-time employment. In Phase 2, everyone who is working is asked about how many hours a week he or she usually works. Since the typical work week is between 35 and 40 hours, we use 35 hours or more to define "full-time" work and less than 35 hours to define "part-time" work.

Work history. Very few data on work history are collected. In Phase 2, everyone is asked whether he or she *has ever* worked. We combine this with current employment to create three categories: people who are currently employed, people who have worked but are not doing so now, and people who never have worked.

Self-reported work limitation. In the Core, the "Major life role" question is used to lead into a series of questions to identify whether, because of health or impairment, the person is unable to perform that role, or is limited in doing so. People for whom work is not their major life role, were asked another question to identify whether their health or impairment prevents them from performing work or limits the kind or amount of work they could do. We use these questions to code people into three categories: those who report they are "Unable to work," "Limited in work," or "Not limited in work."

Interest in work among those not currently working. The most direct indicator of interest in work is that the person is looking for employment. All the people who have worked but are not working currently are asked whether they are looking for work or on layoff or both. Although most of those with no work experience were not asked whether they were looking for work, one subgroup was asked whether they had looked during the past 2 years; this is a useful indicator for this subgroup.

Those who have worked but are not currently working are asked whether they "retired on disability;" and if so, whether they would have been able to continue working if enough accommodations were made at the workplace or in transportation. Although answering that they would have been *able* to continue working is not as strong an indicator as saying they would have *chosen* to continue, we use this question as another indicator of interest in working.

Finally, three subgroups were asked whether they plan to look for work during the next 6 months. One of these is the same subgroup of people who have never worked that is asked if they have looked during the past 2 years. The other two subgroups are not now looking for work, but say they could work if accommodations were made.

(Three other questions may show an interest in working, but seem weaker indicators. These are (a) whether the person would be able to work if accommodations were made; (b) whether the person would need special features at work; and (c) whether the person would need special equipment, assistance, or arrangements. These are not included in the present analysis.)

Vocational rehabilitation. An entire section of Phase 2 explores vocational rehabilitation. For this analysis, we consider only whether the person received any of the itemized vocational rehabilitation services. The preface to the question explains: "These next questions are about vocational rehabilitation. Vocational rehabilitations services are designed to help people find a job, get back to work, or simply function better in their everyday activities."

Volunteering. In Phase 2, everyone is asked if he or she was involved in any unpaid volunteer work during the past year, and if so, how much. We treat this as a simple dichotomy: "Any volunteer activity" or "No volunteer activity" during the past year.

Barriers to working. Among the many types of potential barriers to work, Phase 2 contains measures of three rather different ones: reasons why people are discouraged from

looking for work, the experience of discrimination, and needing but not having special equipment or arrangements. Each of these is asked only of some of the employment subgroups.

A set of questions about past experience of discrimination is asked of people who are working currently and of most categories of those who have worked in the past. The discrimination questions are not asked of those who are retired or to those who say they could not work even if accommodations were made.

Two sets of questions ask whether the person would need any special features at the worksite (e.g., an adapted work station or an automatic door) and whether the person needs special equipment, assistance, or work arrangements. Needing worksite features or special equipment, assistance, or arrangements does not, of itself, constitute a barrier. However, not having features or equipment that one needs would be a barrier. Employed people are asked first whether they need the features or equipment (whether or not they have them); then those who say they *do* need a specific item are asked whether they have that item.

(The interview includes a set of direct questions about barriers that discourage the person from looking for work. These 11 questions cover issues that range from fear of losing current benefits, to family pressures, to lack of transportation, to anticipation of being refused a promotion, transfer, or training. These questions are asked of 4 of the 14 employment subgroups of people who either are not currently working or have never worked. They have not been used in the present analysis.)

Key Social and Health Factors

Four social (demographic) factors — gender, age, education, and race/ethnicity — are used customarily in employment analyses. We describe employed and unemployed people in terms of these factors, contrasting the patterns of the three impairment status groups.

Age. NHIS-D collects age by single years which permits us to re-code it into any age groupings that are useful. For different purposes, different groupings are useful (see the discussion of age in Chapter 3). We created two age variables, one using broad age categories, the other detailed ones.

Education. NHIS-D collects education data by the highest grade or year of regular school completed. High school and college are the main institutional units. Therefore, we initially divided education into less than high school, high school graduation, some college, and college graduation or more. Since there is little difference in the employment rates of those who have completed high school and those who have attended but not completed college, we collapsed these categories leaving us with less than high school, high school graduation or some college, college graduation or more.

Race/Ethnicity. NHIS-D collects data on both race and ethnicity. For race, the answer options include not only White and Black, but also 14 other categories, mostly Asian and Pacific Island. For ethnicity, NHIS-D inquires only about Hispanic origin (five specific categories plus "Other Latin American" and "Other Spanish"). Historically, non-Hispanic Whites have been the dominant group in American society. Therefore, as a predictor of employment, we contrast all non-Hispanic Whites with all others — Black, other races, and all Hispanics who can be of any race.

Hospital stays. At the very beginning of the interview, the interviewer specifies a date 13 months earlier, and asks for each person whether he or she has been a patient overnight in a

hospital since that date; and, if so, how many times. We code only whether the person has been an overnight patient at all.

Bed days. After a number of other questions about restricted activities, contacts with doctors, injuries and accidents within the 2 weeks preceding the interview, the person is asked about how many days illness or injury have kept him or her in bed during the past 12 months (including overnight stays in hospitals). The number of days is coded.

Other questions ask whether the person missed any time from a job and how many times the person missed more than half a day from work because of illness or injury during the 2 weeks preceding the interview. These questions get the precise number of days missed from work. NCHS assumes people would remember the past 2 weeks more accurately than the past year. Nevertheless, we did not use these variables because so few people are likely to have missed work within a 2-week period that we would not have enough cases to analyze.)

Perceived health status. In the middle of the series of health-related questions in the Core–after the person has been asked about activity limitations and recent injuries, accidents, and contacts with a doctor or other health care provider — the person is asked about his or her health in general: is it "excellent," "very good," "good," "fair," or "poor?" People who answer that their health is good or better show little variation on key variables so we combine them into one category, "Excellent/good." Since those reporting "fair" or "poor" health differ from the others and from each other, we retain them as separate categories.

Chart 2.1 (Selected) Variables, Concepts, and the Questions by Which They Are Measured		
Measured	**Concept**	Variable Name & Categories
Core, page A, Question 3: "What is "_'s" date of birth?" (Enter date and age . . . .) Explanation: The interviewer records the date of birth and enters the age in years.	Age	**"Detailed Age Groups;" "Broad Age Groups"**
		"Broad age groups," combine: • 18-54 • 55-69
Phase 2, Section D, Question 25: "IN THE PAST FIVE YEARS, have you been fired from a job, laid off, or told to resign because of any ongoing health problem, impairment, or disability?" Question 26a: "IN THE PAST FIVE YEARS, because of an ongoing health problem, impairment, or disability, have you been (1) refused employment? (2) refused a promotion? (3) refused a transfer? (4) refused access to training programs?"	Health or impairment-related discrimination	**Discrimination**
		Categories: • Experienced Discrimination • No Discrimination
Core, page D1, Question 1a: "DURING THOSE 2 WEEKS, did – work at any time at a job or business not counting work around the house? (Include unpaid work in the family [farm/business].) If no, Question 1b: "Even though – did not work during those 2 weeks, did – have a job or business? If no, page L2, Question 5b: "Earlier you said that – didn't have a job or business last week or the week before. Was – looking for work or on layoff from a job during those 2 weeks?" Explanation: People who answer "yes" to page D1, Question 1a or 1b are "employed;" all others are "not employed."	Current employment status	**1. Employment (Phase 1)** **2. Employment (Phase 2)** **The concept was measured at two times**
		Categories: • Employed • Not Employed
Phase 2, Section D, Question 18 or 27: "About how many hours a week do you usually work at your current job?" Explanation: People who work fewer than 35 hours a week are coded "part time;" people who work 35 hours or more are coded "full time."	Full-time or part-time employment	**Full-time Employment / Part-time Employment**
		Categories: • Full-time • Part-time

Extensive questions in Phase 1, Parts A-E; for an overview see pp. 26-28 of full report; for details about the coding of this variable, contact the authors.	Whether serious impairment exists and if so, whether it is visual or non-visual	**Impairment Status** Categories: • People with Serious Visual Impairment • People with Serious Nonvisual Impairments • General Public (people without serious impairment

Phase 2, Section D, Question 9: "Have you looked for work in the past two years?" Question 11: "Do you think you will look for work at any time in the next six months?" Question 37: "Are you looking for work or on layoff from a job?" Question 54c: "If enough accommodations were made at the work place or in transportation, would you have been able to continue working?"	Interest in work among those not currently employed	**Interest in Work** Categories: • Interest Indicated • No Interest Indicated
Core, page B1, Question 1: "What was – doing MOST OF THE PAST 12 MONTHS; working at a job or business, keeping house, going to school, or something else?"	Major life role	**Major Life Role** Categories: • Working • Keeping House • Going to School • "Something Else"
Core, page G, Question 4: "Would you say "_'s" health in general is excellent, very good, good, fair, or poor?" Explanation: "excellent," "very good," and "good" are recoded into "Excellent to Good."	Self-assessment of one's health in general	**Perceived Health Status** Categories: • Excellent/Good • Fair • Poor
Phase 1, Part A, Question 1a: "Does anyone in the family have SERIOUS difficulty seeing, even when wearing glasses or contact lenses?" If yes, Question 1d: "Is – legally blind?" If no, Question 1e: "[Do you expect/Is – expected] to have SERIOUS difficulty seeing for at least the next 12 months?" Explanation: Those who answer "yes" to Question 1d are coded "legally blind;" those who answer "yes" to Question 1e are coded "Serious visual impairment;" all others are coded "No visual impairment."	Severity of visual impairment	**Serious Visual Impairment status** Categories • Legally blind • Serious Visual Impairment (includes legally blind, unless specified as "excluding legally blind") • No Serious Visual

Measure by: Phase 2, Section E, preface: "These next questions are about vocational rehabilitation. Vocational rehabilitations services are designed to help people find a job, get back to work, or simply function better in their everyday activities." Question 1a: Have you ever received any of these vocational rehabilitation services: (1) On-the-job training? (2) Job placement? (3) Training in job seeking skills? (4) Vocational or business school training? (5) College or university training? (6) Personal adjustment training? (7) Physical therapy? (8) Occupational therapy? (9) Other medical treatment? (10) Special aids or technology such as wheelchairs hearing aids or computers? (11) Training in homemaking or in self-care? (12) Sheltered workshop? (13) Supported employment? (14) Driver training? (15) Any other rehabilitation services? If yes to any, Question 1b: "Was the [service] arranged or provided by a state rehabilitation agency?" Question 2: "In what year did you LAST receive vocational rehabilitation services? People who were asked Question 2 were coded as having received vocational rehabilitation. All others were coded as not having received any vocational rehabilitation.	Whether any vocational rehabilitation was received	**Vocational Rehabilitation** Categories • Received Vocational Rehabilitation • Received no Vocational Rehabilitation
Measured by: Phase 2, Section D, Question 6 (or the identical question): "DURING THE PAST 2 MONTHS, were you involved in unpaid volunteer work such as teaching or coaching, office work, or providing care?"	Whether any volunteer activities were performed during the past year	**Volunteering** Categories • Any Volunteer Activity • No Volunteer Activity
Phase 2, Section D, Question 1: "Have you EVER worked at a job or business?" If "yes," Phase 2, Section D, Question 16: "Do you NOW work at a job or business?"	Work history	**Work History** Categories • Employed • Not Employed • Never Worked

People who report that what they were doing most of the past 12 months was working at a job or business were asked Core, p. B1,Question 2a: "Does any impairment or health problem NOW keep – from working at a job or business?" If no, Question 2b, "Is – limited in the kind OR amount of work – can do because of any impairment or health problem? Everyone who reported that they were keeping house, going to school, or "something else" most of the past 12 months were asked Core, p. B1, Question 5a: "Does any impairment or health problem keep – from working at a job or business?" If no, question 5b: "Is – limited in the kind OR amount of work – can do because of any impairment or health problem?" Those who answer yes to question 2a or 5a are coded "Unable to work." Those who answer yes to Question 2b or 5b are coded "Limited in work." And those who answer no to both questions are coded "Not limited in work."	Self-reported work limitation	**Work limitation** Categories • Unable to Work • Limited in Work • Not Limited in Work

CHAPTER 3

Age, Other Social Characteristics and Employment Among People with Serious Visual Impairment Compared to the General Public and to People with Nonvisual Impairment

Presumed not employed. The problem of employment for people with disabilities that stimulated this study, as it has a large and growing body of research and practice, is starkly shown once again in Table 3.1. We see there, as a baseline, that the overwhelming majority – nearly four-fifths (77%) – of working-age adults in the general public were employed at the time of their first interview.

That figure stands in sharp contrast to only two-fifths (42%) of adults with serious *visual* impairment who were employed. Two-fifths is a large minority, but it is a minority nevertheless.

Table 3.1
Labor Force Status (Phase 1) by Impairment Status, Ages 18-69 Years: U.S., 1994-95
(Percentages)

	"General Public" (With **No** Serious Impairments) %	People With Serious **Visual** Impairment %	People With Serious **Non-Visual** Impairments %
Employed	77	42	50
In the Labor Force - Not Employed	3	4	4
Not in the Labor Force	20	55	46
TOTAL	**100%**	**100%**	**100%**

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

It shows that even a broader definition of serious visual impairment than legal blindness still leads, according to the statistical odds, to the conclusion: "presumed not employed." (Employment among adults with serious *non*-visual impairment was at a level between those groups – precisely one-half were employed.)

Interestingly, the percentage in each group who were "in the labor force, not employed" does not differ, and is very small – 3 or 4%. The phrase in quotation marks is a technical term

for those who fit the official definition of "unemployed," because they are not working but they are *actively looking for work*. The specific criteria used by NHIS-D differ slightly from those used in the Bureau of Labor Statistics' monthly report to the public giving the nation's unemployment rate.

Obviously, the remaining category ("not in the labor force") is where the general public and the impairment groups again differ widely. Keep in mind that "not in the labor force" can be an extremely heterogenous category, probably more so among people with serious impairment than among the general public. It includes people who are out of the labor force by choice; people who in fact want to work, but have become discouraged and therefore stopped actively looking for jobs; and others who want to work but are too sick to search. More than half of the people with serious visual impairment (55%) were not in the labor force when they were interviewed in Phase 1, compared to only 20% of the general public who were not in the labor force. (The figure for "not in the labor force" was 46% for people with non-visual impairment.)

Working and life roles. One's job status at a particular time is a narrow way to consider employment, which has much larger significance in the typical lifespan. As the term "working age adult" conveys, working is the main way most people define their major life role; other socially acceptable life-role options are limited essentially to "student" or "homemaker." NHIS-D tapped into life-roles by asking what respondents were mainly doing over the past year: working, keeping house, going to school or "something else" (unspecified).

Not surprisingly, the same pattern we found regarding current employment status shows up when we compare the general public to people with serious impairment, visual or non-visual, and look to see whether work was their main activity over the past year. (Data not shown.)

More noteworthy is the two-tiered picture that emerges when we look at major life- roles over the past year, divided according to whether people were employed or not employed at the time of the interview.

The first tier of this comparison refers to people who *were* employed at that time. Table 3.2, Part A, shows that employment tends to be an equalizer of major life roles; whether people are visually impaired, or have serious non-visual impairment, or are in the general public, working dominated the activities of those who were employed (88%, 87%, 92% respectively) who said working was their major role, even if they also were keeping house or going to school, a secondary activity – we cannot tell secondary activities from the NHIS-D data.

The finding that employment tends to equalize the lifestyles of blind and sighted people is strongly supported by our earlier research on blind adults' time use (Kirchner et al., 1992). In that study, we selected for interviews a diverse, but non-representative, national sample of legally blind employed people and matched them with a sample of sighted persons, also employed, who were: (a) same gender, (b) close in age, and (c) in similar living circumstances (i.e., living alone *versus* with others). Although we found that people in the blind and the sighted samples differed somewhat in their time use (e.g., blind people spent less time in "active" leisure, balanced by more time in "passive" leisure such as reading or listening to music), the overarching finding was the similarity in lifestyles between blind and sighted people, which we attributed to the shared fact of being employed.

Table 3.2
Major Life Role by Impairment Status and Employment (Phase 1): U.S., 1994 - 95
(Percentages)

	"General Public" (With **No** Serious Impairments) %	People With Serious **Visual** Impairment %	People With Serious **Non-Visual** Impairments %
A. Employed (Phase 1)			
Working	92	88	87
Keeping House	3	4	4
Going to School	5	4	4
"Something Else"	1	5	5
TOTAL	**101%**	**101%**	**101%**
B. Not Employed (Phase 1)			
Working	12	6	8
Keeping House	49	38	38
Going to School	18	4	5
"Something Else"	22	52	49
TOTAL	**101%**	**100%**	**100%**

Due to rounding, the percentages may not add up to exactly 100%

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

If not working, what? Now examine the second tier of Table 3.2 (Part B). As background, we know that compared to people in the general public, much higher proportions of people with impairment (visual or non-visual) were not employed at the time of the first interview. The data in Table 3.2 lets us answer the question that then surfaces: What *had* they been doing as their "major life-role" over the past year?

The answer as shown in Table 3.2 is dramatic and both disturbing and perplexing. If we consider that "working" (note that some people who were not employed at that time did report that "working" had been their major role during the past year), "keeping house" and "going to school" are all accepted by society-at-large as productive roles, nearly four-fifths of the general public who are not employed had filled one or the other of those roles (12% working; 49%

keeping house; 18% going to school; for a total of 79%). The rest of the general public, about one-fifth (22%), were mainly doing "something else" – a category, as noted, that was left unspecified.

But well over twice that proportion – *more than half* (52%) – of blind/visually impaired people who were not employed were doing "something else" as their major activity over the past year, as were nearly half of people with serious non-visual impairment. Because "something else" was not specified in the interviews, the finding is somewhat perplexing – in a later chapter we will examine what the category might represent.

In any case, we can safely assume that in terms of public perception (and maybe in actuality), doing "something else" is a category of nonproductive activity, and that is what is disturbing.

Work vs. rolelessness? To sum up thus far, there is a vast gap in the rate of employment, and more generally, the labor force participation rate – 35 percentage points – between working-age people with serious visual impairment and the general public; the gap is nearly as wide (27%) when people with serious non-visual impairment are compared to the general public.

Furthermore, among that majority of people with serious impairment who are not employed, participation in other valued social roles is also restricted, suggesting the bleak prospect captured by the concept of "rolelessness." Fine and Asch (1988) had applied that concept to the lives of many women with disabilities, based on the lower rates of employment and of marriage or parenthood among women with disabilities than among men with disabilities. Kirchner et al. (1992) also found, in the time-use study of employed legally blind and sighted people that the blind women were less likely than blind men to have married or to be parents.

To explore possible "rolelessness" a bit further, we contrasted men's and women's reports of major life-roles among people with serious visual impairment who were not employed, and then went on to compare those results with the reports by men and women, separately, in the general public, who were not employed. (Data not shown.) The results are interesting. They show that women, whether in the general public or among those with serious impairment, are much less likely than their male counterparts to report apparent rolelessness (i.e., doing "something else"), and that is because over half the women in both groups report they were keeping house (54% of women with serious visual impairment, 61% of women in the general public), compared to 8-10% of men in both groups who reported "keeping house." Future analysis will examine major life roles using NHIS-D data on marital and family statuses, but here, we must remain with the main focus on employment, turning now to social characteristics and employment rates.

Social characteristics. "Old news." As we saw with the data that opened this chapter, sometimes "old news" is still the big news. That observation applies also to much of the data we will unfold in this section.

We start with the well-documented pattern that shows how employment rates in the general public vary according to social characteristics. The research question is whether the same social characteristics also have an impact on employment rates in the two impairment groups; and furthermore, whether their impact, if any, is muted or heightened compared to the general public's pattern. The answers that we find in this analysis will add to the still limited literature on labor market characteristics among people with disabilities (e.g., Barnartt & Altman, 1997; Stoddard et al., 1998; Yelin, 1992).

The main motif of the results will be familiar; it shows that the social background characteristics of age, gender, and race/ethnicity affect individuals' labor market opportunities, even though they are"functionally irrelevant" for nearly all jobs. Going beyond that conclusion, there are intriguing sub-themes that come through our examination of the data at hand.

We also examine education. Education is an "achieved" characteristic (in contrast to race/ethnicity, which one acquires by birth), and ideally, is very functionally relevant for jobs. However, the ideal role of education is often compromised by the fact that one's gender or race/ethnicity may limit access to quality education.

Age. Age is the keystone of our analytic framework and gets close attention in Table 3.3. There, we show the employment rates according to six detailed age groups ranging from 18 through 69 years; then we show the employment rates according to just two broad groups, 18-54 years *versus* 55-69 years, the classification we will use throughout subsequent analyses.

Table 3.3 shows that, in the general public, the range in percentages who are employed, looking across the detailed age groups, is enormous – there is almost a 60% spread from the highest employment rate of 84%, which occurs in two age groups (22-49 years and 50-54 years), down to the lowest rate, which is found in the 65-69 year old group (27% employed).

By comparison, among people with visual impairment, and among those with non-visual impairment, the range of employment rates, while great, is relatively muted: the spread is just over 40% between the *highest* rates of people employed, found in the 22-49 year old group (58% employed of those with visual impairment, and 62% of those with non-visual impairment), and the *lowest* rates employed, found in the 65-69 year old group (14%, 17%, respectively).

It is especially noteworthy that the span of peak employment ages is more restricted for people with serious impairment than for the general public. Especially among people with serious *visual* impairment, there is a marked decline in the percentage who are employed

Table 3.3
Employment (Phase 1) by Impairment Status and Detailed and Broad Age Groups: U.S., 1994-95
(Percentage Employed - Phase 1)

A. "General Public" (With **No** Serious Impairments)

18 - 21 Years	22 - 49 Years	50 - 54 Years	55 - 59 Years	60 - 64 Years	65 - 69 Years	18 - 54 Years	55 - 69 Years
62%	84%	84%	75%	53%	27%	82%	54%

B. People With Serious **Visual** Impairment

18 - 21 Years	22 - 49 Years	50 - 54 Years	55 - 59 Years	60 - 64 Years	65 - 69 Years	18 - 54 Years	55 - 69 Years
52%	58%	39%	37%	20%	14%	54%	22%

C. People With Serious **Non-Visual** Impairments

18 - 21 Years	22 - 49 Years	50 - 54 Years	55 - 59 Years	60 - 64 Years	65 - 69 Years	18 - 54 Years	55 - 69 Years
56%	62%	55%	44%	30%	17%	61%	30%

Due to rounding, the percentages may not add up to exactly 100%

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

between the 22-49 year old group and the 50-54 year old group – from 58% employed in the younger of those two groups, down to 39% in the older one. Before continuing to draw out noteworthy aspects of Table 3.3, we will explain the decision we made to use 18-69 as the age range, a decision that readers may be questioning.

ANALYSIS NOTE: ***Why 18-69 years?***
(Read the range as "18 through 69;" that is, up to age 70.)

For decades, analysts have consistently used 64 years (i.e., up to 65) as the upper bound when they discuss age in relation to labor force issues, even though there certainly have been some workers older than 65 years.

We have chosen to break away from convention and use age 69 (joining a small group of analysts who have also done so, for example, LaPlante and Carlson, 1996). There are several reasons for the choice.

First we considered Social Security Administration (SSA) policy. Although the standard retirement age of 65 years is what drives the usual focus on that age, there are other aspects of Social Security retirement provisions as they currently stand that argue for an older cut-off in research analyses. For years, SSA regulations have treated workers in the age group 65-69 years old differently from those who are 70 years or older. Workers who are 65-69 must give up a portion of their retirement benefits in relation to their level of earnings. Congress recently raised the dollar level of earnings allowed before deductions apply, and at the same time "broke the link" with policy about earnings of legally blind SSDI beneficiaries that had existed for about two decades.

Looking to the future, we know that the standard age to begin drawing Social Security retirement benefits is slated to rise in small increments, beginning in 2003. By 2025, the age for full retirement benefits will be 67. That policy was legislated in 1983 when the significant expansion of healthy life expectancy had already become evident.

The last point is the main rationale for using the broader age range. There is certainly increased possibility from a health point of view for working into older ages, and there is evidence that specifically in the blindness and low vision rehabilitation arena, there is emerging interest by people over 65 to continue working. State directors of programs designed to assist people age 55 or older to live independently, are identifying people who want to work, and then making vocational rehabilitation services available to them. As a result, visually impaired people age 65 and older are being placed in employment (G. Johnson, telephone communication, April 28, 1999).

By contrast, the lower boundary of the age range varies considerably among analysts of age and employment. Examples exist of reports that use anywhere from 16 years to 21 years as the lower boundary. For us it is relevant that NHIS-D used 18 years as the youngest age to administer its adult" questionnaire.

Where is the gap biggest? Returning to Table 3.3, it is also interesting to locate which age group reveals the widest gap between the employment rates of people with serious visual impairment and people in the general public. (People with non-visual impairment consistently fall between the other two groups, being more similar to people with visual impairment than to the general public.)

The gap is smallest at each end of the age range, probably for somewhat different reasons. In the youngest group (18-21 years), it is likely that blind and visually impaired people who have entered the labor force did so with the specialized skills they need; indeed over half that age group (52%) is working (some while they are also students).

Also, in this age group, the role of "student" *fully occupies* many people both with and without serious impairments. Longitudinal research on special education students has shown that those who are classified as visually impaired have the highest rate of continuing into post-secondary education, although still at a lower rate than non-disabled students (Valdes et al., 1990).

All of the above does not intend to imply that career motivation and job options are unproblematic for visually impaired young adults, because there is sufficient evidence that many have not received career education, social skills training, or early work opportunities and may not even enter the labor force after they finish schooling (Kirchner, Simon & Stern, 1985; Valdes et al., 1990; Wolffe, 1996). The point here is simply that the employment gap is small relative to older age groups.

At the oldest end (65-69 years), whether in the general public or people with serious impairments, the gap narrows, because retirement is common for all. Again, that is not intended to detract attention from barriers for visually impaired older persons who want to work. Indeed, *because* retirement is normative after age 65, those who want to work may face added attitudinal obstacles. And the data show that noticeably more elders in the general public are working than are those with visual impairment (27% versus 14%).

The main focus of concern then, is on the older middle groups, especially those who are 50-54 years old: At that age, the percentage who are working is fully 84% among people in the general public, but only 39% among people with serious visual impairment – a 45 percentage point difference! The gap is similarly remarkable in the next older group – there is a difference of almost 40% between the employment rates of those who are 55-59 years old, comparing those with visual impairment to those in the general public. Furthermore, the gap remains very large even in the 60-64 year old category; there is a spread of 33% between the employment rate of people with serious visual impairment and those in the general public.

Interpreting the pattern across age groups. These findings offer a prime example of the challenge, and perhaps impossibility, of interpreting the age-related patterns with any assurance, given that all the data were collected in one time period. We cannot sort out the extent to which historical *versus* life-stage influences are at play; the uncertainty is compounded by the likelihood that people enter the status "seriously visually impaired" at various ages, but especially at the older ages. Certainly, it is *not* valid to interpret the results as if they only represented changes in employment as individuals age. For example, it is *not* justified to conclude from the drop in employment rate between the 22-49 years and 50-54 years categories, that visually impaired people who are working when they are younger than 49 years old begin to drop out of work in large numbers as they move through the next age group. Rather, we expect that the older group is augmented by people who become visually impaired at that age, and have a very low rate of employment.

It is a very high priority for future research to apply a "cohort" design that will permit sorting out the effects of (a) individual aging among workers with visual impairment, (b) onset of visual impairment at older ages, and (c) historical changes that affect employment options.

(NOTE: A cohort design requires selecting and interviewing a sample who are at different ages in a given year (e.g., 1999); then another cohort is selected for interviews at an interval long enough for societal trends to develop (e.g., 2009), and the initial sample is also re-interviewed at that time.)

In order to move on in the present analysis, and to carry forward the important insight that age strongly conditions other influences on employment, we need to work with a more concise version of the age variable.

ANALYSIS NOTE - *Why use age 55 as the cutting point?*

In view of the age group patterns just reviewed, the choice of a cutting-point to create two broad age groups for subsequent analysis was difficult. In fact the best cutting-point for people without impairment is at 60 years, since a drop in employment rate of over 20% occurs at that age (from 75% employed in the group just below 60 years old, down to 53% employed in the group who are 60-64 years old).

By contrast, for people with serious visual impairment, there are really two ages when there is a moderate drop of nearly 20 points each: the first, as discussed above, is found between the group who are 22 - 49 years old and the group who are 50 - 54 years; the second smaller drop occurs at the 60- year mark. Interestingly, among those with serious visual impairment, the percentage employed is essentially the same in the groups just above and below 55 years.

Finally, for the group with serious non-visual impairment, there is a relatively smooth decline in employment rates over the age groups.

Given this mixed pattern, our choice was determined in part by the policy relevance of age 55 in relation to people with serious visual impairment, since that is the age criterion for eligibility for services under Title VII, Chapter 2 of the Federal Rehabilitation Act ("Independent Living Services for Older Persons with Visual Impairment.")

Along a similar line, as noted in Chapter 1, when the SSDI program was begun 43 years ago, Congress approved age 55 as appropriate to embody the concept that disability triggers "premature retirement." That concept no longer describes the program adequately, but the perception that older beneficiaries are more "appropriate" than younger ones lingers.

Putting the cutting point at age 55 did not result in the optimum balance of sample numbers in each category for the groups with serious impairment. Even in a study with as large a sample as this, one has the problem of diminishing numbers for analysis, especially when we focus on those who are legally blind. That is the reason we cannot conduct separate analyses with the
subgroup who are totally blind, although it would be desirable to do so. (More precisely, NHIS-D did not even ask that question, being aware of the very low prevalence of total blindness.)

Future analyses might use alternative age-breaks. However, whatever grouping is chosen, some information is lost. The reader should keep in mind that the age effects on employment statistics would be even sharper if different cutting-points are used for the different impairment groups.

As a comparison between the last two columns in Table 3.3 shows, the gap in percentage employed between those aged 18 - 54 years *versus* 55 - 69 years is similar in size among the general public, people with visual impairment, and people with non-visual impairment, and it is large. That is to say, for all three groups, there is a difference of about 30 percentage points between the employment rate of the broadly-defined younger and older groups.

There are intriguing parallels in the specific numbers that apply when we compare (a) employment rates of younger and older people in the general public, and (b) younger and older people with serious visual impairment, and then go on to compare (c) employment rates of people *within* the younger category according to whether they have visual impairment or are in the general public, and finally (d) do the same within the older category. It is curious that each of those comparisons yields exactly the same result: 28% is the difference between age groups in

the general public *versus* visually impaired, and is also the difference between those in the general public and in the group who are visually impaired, *within* age groups.

A further coincidence: In the younger group with serious visual impairment, 54% were employed, exactly the same as the percentage employed in the *older* group of the general public.

While that precise pattern of numbers is a fleeting function of the particular sample and the ways we grouped it, the general message is more stable. The message is: When considered broadly, age and whether or not one has a serious impairment have separate and roughly equal bearing on employment rates. Put otherwise: When it comes to employment, age matters, whether or not one has serious impairment; *and* impairment matters, whether one is young or old.

Gender, race/ethnicity, education. With that symmetry in mind, we move on to Table 3.4 in order to look at the effect of other social characteristics on employment rates. The wealth of data in Table 3.4 merits close study; shown are the percentages who are employed according to their gender, race/ethnicity, and education level, within the general public and the two impairment groups *and* within the two broad age groups (Table 3.4).

For present purposes, we will give only a summary description of the broad patterns, and then highlight contrasts that are most relevant for our focus on people with serious visual impairment compared to people in the general public.

The familiar motif comes here: The age difference in employment rates shows up everywhere: That is, the age groups differ within every category of a social characteristic (e.g., younger *versus* older men; younger *versus* older women).

Next, within age groups, men are more likely to be employed than are women; people who are White non-Hispanic are more likely to be employed than are race-ethnic minorities; and people with higher levels of completed education are more likely to be employed than those with lower levels.

Now the less familiar riffs: Perhaps most unusual is the absence of a notable difference in employment rates between men and women with serious visual impairment. The point holds especially in the younger group, where only a 5% difference appears (52% vs. 57%); even older visually impaired men and women have employment rates similar to each other (19% vs. 27%). Here it is pertinent to recall that the broad younger age group of visually impaired people conceals the substantial gap between employment rates of people under 50 *versus* 50 years or older.

Table 3.4
Employment (Phase 1) by Gender, Race, Ethnicity, and Education Within Broad Age Groups and by Impairment Status: U.S., 1994-95
(Percentage Employed - Phase 1)

A. *"General Public" (With No Serious Impairments)*

Gender	18 - 54 Years	55 - 69 Years	*Race/ Ethnicity*	18 - 54 Years	55 - 69 Years	*Education*	18 - 54 Years	55 - 69 Years
Women	74%	45%	**White, Non-Hispanic**	85%	54%	**Less than H.S. Graduation**	66%	42%
Men	90%	63%	**Other**	75%	53%	**H.S. Grad or Some College**	82%	54%
						College Grad or More	90%	65%

B. *People With Serious Visual Impairment*

Gender	18 - 54 Years	55 - 69 Years	*Race/ Ethnicity*	18 - 54 Years	55 - 69 Years	*Education*	18 - 54 Years	55 - 69 Years
Women	52%	19%	**White, Non-Hispanic**	59%	26%	**Less than H.S. Graduation**	35%	13%
Men	57%	27%	**Other**	43%	14%	**H.S. Grad or Some College**	59%	27%
						College Grad or More	82%	48%

C. *People With Serious Non-Visual Impairments*

Gender	18 - 54 Years	55 - 69 Years	*Race/ Ethnicity*	18 - 54 Years	55 - 69 Years	*Education*	18 - 54 Years	55 - 69 Years
Women	54%	23%	**White, Non-Hispanic**	66%	32%	**Less than H.S. Graduation**	37%	20%
Men	67%	36%	**Other**	46%	19%	**H.S. Grad or Some College**	64%	32%
						College Grad or More	81%	46%

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

The gender similarity should not be too swiftly credited to improved opportunity for women. Rather it appears to be the result of much *lower* employment rates for men, when compared to people in the general public. Younger men with visual impairment have an employment rate that is fully 33% lower than that of the same age group in the general population. The comparable gap for young women is large but much less so: it is 22% (i.e., the difference between 52% of younger visually impaired women employed and 74% of younger women in the general public).

An intriguing reversal of sorts appears when race/ethnic differentials in employment are compared across the groups with impairment *versus* the general public. Here, the differential is larger among the two groups with serious impairment than among the general public, especially in the older group. For people in the general public who are 55-69 years old, the race/ethnic group employment rates are nearly identical – 54% for White non-Hispanics and 53% for others.

Education is of special interest because it is the social characteristic most susceptible to policy influence. And it also jumps out of this table as containing the groups with both the very lowest employment rate and the very highest employment rate. The lowest rate (13%) applies to older visually impaired people with less than H.S. graduation. The highest rate (90%) refers to younger people in the general public who are college graduates or higher. No surprises there.

But the surprising and encouraging finding is the fact that among younger, visually impaired college graduates or higher, and also among college graduates or higher who have *non*-visual impairments, the employment rate comes very respectably close to the maximum rate found among people in the general public – 82% and 81%, respectively, compared to 90%.

Indeed, the difference between rates of employment for those younger, educated subgroups without and with impairments is too small to reach our guideline of being worthy of policy concern (i.e., less than 10%). If all the differences in the table were that small, we could stop being concerned about employment rates of people with visual or other impairments, and move on to more refined concerns, for example, the complex issue of underemployment (Kirchner & Peterson, 1980).

Of course, as the rest of the table shows, shedding concern with basic employment rates of people with impairments at this time would be a big mistake.

Impairment status profiles. The final task in this chapter is to present the profiles of the general public and the two impairment groups in terms of the social characteristics whose impact on employment has just been demonstrated. Table 3.5 does that, and again plays a familiar motif with a couple of surprising riffs. The most important finding there is with regard to age. As a group, people in the general public are youngest by far, followed by those with non-visual impairments, and then closely by those with visual impairments. Because we have seen the impact of age on employment, this means that part of the gap in employment rates between the general public and the impairment groups is a function of the different age distributions. That seemingly obvious fact often appears to be lost when the employment rates of people with and without disabilities are compared by activists seeking, with good reason, to reduce the inequities that remain.

After all, we have also seen and must not forget that even within the same age groups, people with impairments have lower rates of employment.

A surprising riff: The general public and the two impairment groups hardly differ on their gender mix or on their race/ethnic composition, at least when grouped this broadly. Our expectations had been shaped by typical findings when people with and without disabilities are

compared, covering the whole age range. Those data usually show a much higher proportion of women in the group with disabilities, and a slightly higher proportion of people from minority race-ethnic background (for the whole age range, see McNeil, 1993). Of course, it is also

Table 3.5
Social Characteristics of People Aged 18 - 69 by Impairment Status: U.S., 1994 - 95
(Percentages)

	"General Public" (With **No** Serious Impairments) %	People With Serious **Visual** Impairment %	People With Serious **Non-Visual** Impairments %
D. ***Age in Detailed Groups***			
18 - 21 Years	9	4	5
21 - 49	69	47	53
50 - 54	7	11	10
55 - 59	6	10	10
60 - 64	5	13	11
65 - 69	4	15	12
TOTAL	**100%**	**100%**	**101%**
Age in Broad Groups			
18 - 54 Years	85	62	68
55 - 69	15	38	32
TOTAL	**100%**	**100%**	**100%**
E. ***Gender***			
Women	52	54	49
Men	48	46	51
TOTAL	**100%**	**100%**	**100%**
F. ***Race/Ethnicity***			
White, Non-Hispanic	74	71	78
Other	26	29	22
TOTAL	**100%**	**100%**	**100%**
G. ***Education***			
Less Than H.S. Grad	14	35	26
H.S. Grad or Some College	62	54	58
College Grad or More	24	11	16
TOTAL	100%	100%	100%

Due to rounding, the percentages may not add up to exactly 100%

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

possible that the differences among studies in the definition of disabilities could affect these comparisons, but the main reason is probably the fact that we are excluding people 70 or older (which is most likely to affect the gender distribution) and children under 18 (which is most likely to affect the race/ethnic distribution). (See McNeil, 1993, tables for people age 15-64.)

Finally, moving on to education, the noteworthy difference in educational attainment among the impairment status groups brings us back into familiar territory. The difference shows up especially when we compare the percentage of people with the least education (i.e., less than high school graduation) among people in the general public, and those with less than high school graduation among those with serious visual impairment – 14% vs. 35%. At the other extreme, the percentage who are college graduates is twice as large in the general population, as it is among those with serious visual impairment - 24% vs. 11%.

Discussion and Summary

Discussion. Starting with the next chapter, we will drop from comparisons both the general public" (i.e., people without any or at least any *serious* impairments) and people with serious *non*-visual impairments. The main reason for doing so is a very practical matter – comparison data for most of those aspects we will take up do not exist. That is to say, people with disabilities were asked those questions during the Phase 2 questionnaire, administered about a year after Phase 1. People in the general public were not included in those follow-up interviews.

In the following note, we explain about the category of people with visual impairments believed to be temporary and therefore not serious, who have been included with the general public for this analysis.

ANALYSIS NOTE: ***Serious difficulty seeing – not expected to last 12 months.***

The same practical constraint that forced us not to compare the general public on questions covered in Phase 2 forced our decision not to count people as having serious visual impairments if they reported that they did not expect their "serious difficulty seeing" to last for at least 12 months. This decision was a little more complicated, however.

On the one hand, we would like to have included them, at least provisionally. No previous national survey has asked whether people who report they are visually impaired expect their visual impairment to last. If Phase 2 data were available for this group, we could have explored whether – and in what ways – this distinction is important.

However, these people were not included in Phase 2 on the basis of their visual impairment. Thus, had we included the approximately two-thirds of them who did screen into Phase 2, we would have biased the results by including only those who had other health problems or impairments serious enough to be screened into Phase 2, excluding all those whose *only* impairment was "serious difficulty seeing" which they did not expect to last at least 12 months.

In further research, it may be useful to compare those people who do and do not expect their serious visual impairment to persist. Phase 2 will allow us to make such comparisons among those who have other impairments. A differently designed survey would allow comparisons both for those with and without other impairments. That would allow us to include people who have very serious visual impairment but are hoping that somehow it will be cured.

We also recognize that carrying too many comparisons becomes confusing to the reader, and we will introduce in the next chapter two subgroups of people with serious visual impairment — those who are legally blind, and others with serious visual impairment. Given the regularity of the patterns we have already seen, not enough new information can be gained from extending the comparisons to outweigh the sheer overload of numbers.

One aspect of that highly regular pattern deserves a note here: Quite consistently, the largest contrasts in regard to the aspects of employment we examined appeared when we compared people in the general public and people with serious *visual* impairment; people with serious *non*-visual impairments fell in-between, but closer to those with visual impairment. Because we tried to construct the two impairment categories to make them as comparable as possible in terms of how severe their impairments are (see Chapter 2), it is tempting to interpret that pattern of findings as indicative of the social significance of visual impairment compared to all other serious impairments, combined. But we strongly counsel readers not to jump to that conclusion.

Perhaps there *is* such a unique significance to visual impairment, but these data cannot reveal it, given the lack of real comparability in the various measures that we had available to work with. Certainly, the group we labeled "serious *non*visual impairment" is extremely heterogeneous with regard to the impairment-related items we included. Other plausible groupings are possible, and in fact, many other researchers are working with their own ways of constructing disability categories from NHIS-D measures (e.g., Elinson et al., 1998).

It is equally likely, and somewhat supported by the data in Table 3.5, that the position of the two impairment groups relative to the general public on work-related measures, reflects differences in their sociodemographic composition.

Summary: Lasting impressions. This chapter will have served its function well if it leaves a few indelible, data-generated impressions about employment of people with impairments, compared to the general public.

- **Impairment status – even serious visual impairment – is not enough to tell you whether someone is or is not employed**.

  In the U.S., in 1994-95, about two-fifths of people with serious visual impairment, aged 18-69, *were* employed; almost all the others were not in the labor force.

- **But, impairment matters**.

  Impairment status – meaning "either that one is in the general public and has NO serious impairment" *or* "has a serious visual impairment" *or* "serious non-visual impairment" – can tell you a lot, statistically, about people's employment status. Compared to the *two-fifths employed* among people with serious visual impairment, *four-fifths* of people in the general public were employed.

- **And age *really* matters, regardless of impairment**.

  Employment rates differ enormously by age groups, giving rise to gaps as large as 60% between age subgroups among people who are without impairment, and 40% between age subgroups among people with serious visual impairment.

- **Age pervades employment rates, regardless of other social characteristics and impairment status.**

  Age affects employment rates among women and men; among the majority race/ethnic group and the minority group; and at every educational level.

- **Higher education overrides impairment effects, for *younger* persons.**

  There is hardly any difference in employment rate among college graduates, 18-54, with serious visual impairment (82%) and those in the general public (90%).(However, this difference does cross the threshold that defines a small but noticeable *standardized* effect size.)

- **Employment, itself, tends to be a lifestyle equalizer across impairment statuses**.

  Working constitutes one's major life role for people, whether in the general public or with serious impairment, if they are employed.

- **Not being employed seems a bleak option for too many people with serious visual impairment.**

  Compared to people without impairment, most of whom report productive life roles keeping house or going to school if they are not employed, a bare majority (52%) of people with serious visual impairment report their major activity over the past year was "something else." We know too little about what "something else" really means or about whether these people want to work. Those are hot trails to follow in further analysis.

Transitioning to the next chapter, we move those impressions to the background; they remain there like a prepared canvas on which we will, in the remaining pages, paint a fairly detailed picture of employment status and issues applying to people with serious visual impairment, comparing those who are legally blind with those who are not. The picture will be only "*fairly* detailed" because the full array of aspects that NHIS-D measured is too extensive to bring in, given our aim of leading a *focused* tour on this first trip through the NHIS-D gallery.

CHAPTER 4

Age and "The Employment Connection" Among People with Serious Visual Impairment: Legally Blind vs. Others

An oxymoron? When we set the stage for this report, we referred back to the policy context of the legislative definition of blindness. In those early decades of this fading century, the policy intent was to identify "objective" clinical criteria of severity of visual impairment that conclusively established an individual's incapacity for productive employment. That perspective is still an official one, although with a more complex rationale now than it had originally. Now, there is a glimmer of understanding that the sheer fact of legal blindness cannot itself explain people's disadvantages in the employment arena.

Unofficially, we still occasionally encounter people — even physicians or other professionals — who strongly disbelieve or at least doubt that blind people can work. It is important to note that those doubters and disbelievers are in the population from which persons who become legally blind later in life are drawn; if that happens to them it is not surprising if they believe that they can no longer work.

From the doubter's perspective, this chapter would seem like an elaborate oxymoron, because it sets out to explore not *whether* legally blind people are employed, but rather the strength and variety of their connections to employment.

We will not limit the exploration to those who are legally blind. Throughout the last chapter (Chapter 3), we presented data on employment status, age and other social characteristics of people with "serious visual impairment," and will follow that larger group here as well. That includes people who are legally blind, of whom some are totally blind, and also many others who are not legally blind. In fact, those who reported they are legally blind constitute only one-fifth (21%) of the people we defined as having "serious visual impairment."

Vehicles of analysis. We next give an extended comment on the key measures of visual impairment. We want to entice our nontechnical readers to stay with us for that discussion. Those measures are the main vehicles we will use to convey the findings through the rest of this report. As such, they deserve as much attention as any other vehicle you expect to depend upon to get over a long distance with sometimes rocky terrain.

Also, by sharing our own doubts and delights about the raw material we had to work with, we give readers a better chance at criticizing or gaining confidence in what we will be showing them. (The technical description of the measures was given in Chapter 2.)

ANALYSIS NOTE: ***A nontechnical comment on the measures of serious visual impairment.***

"Serious visual impairment:" Comparable to what? The visual impairment questions in NHIS-D were worded differently from any questions about visual impairment in other federal surveys or for that matter, any other surveys of which we are aware. There is a good reason for that, given below, and it need not pose a problem for this analysis. But be aware that those differences in measures exist if you try to make direct comparisons with other reports about employment from the same time period (e.g., Kirchner & Schmeidler, 1997; McNeil, 1997).

Most importantly, be forewarned that the weighted numbers, shown in the Appendix, will not match projections of national numbers of visually impaired people from recent surveys that

used some variation of a question about ability "to see to read ordinary newspaper print." That is partly because the age-span is different, but mainly because the definitions are different.

NHIS-D's purpose in using a very generally-worded question about vision problems (i.e., "serious difficulty seeing even with glasses") was to cast a broad net as a screening device. Answers to the screener series determined whether a person would receive the Phase 2 questionnaire on disability-related issues. It was an not aim of the initial question to generate prevalence projections of severe visual impairment; rather it was expected that some combination of the screener and follow-up questions (e.g., "is it expected to last 12 months?") could target subgroups that research analysts were interested in. And that is how it worked for us, although in an ideal world (meaning a less mammoth questionnaire), we would have wanted to see additional clarifying questions.

Although variations among question wordings and contexts are vexing for some purposes (Kirchner, 1999; Todorov, 1999), they pose little problem for the kind of analysis we are doing here. That is because we are comparing percentages among subgroups, not making projections, and furthermore we focus on fairly-to-very large percentage differences. Studies show that different ways of asking questions about disability status capture somewhat different populations and may lead to different national prevalence estimates, but demographic and service characteristics expressed as percentages are very similar across studies.

A prime example refers to employment rates among people with disabilities. Without getting into the debate about whether there have been small gains, small losses, or no real change in the rate since ADA, the rate has been very consistently estimated at about 25% - 30% employed among persons with severe disabilities, across studies with as widely different sample sizes and ways of defining the population as the Bureau of the Census' SIPP (Survey of Income and Program Participation); Bureau of Labor Statistics' CPS (Current Population Survey); the National Center for Health Statistics' HIS (Health Interview Survey); and Louis Harris Associates' surveys of people with disabilities (cited in Kaye, 1998b).

Legal blindness in NHIS-D: A plausible measure? NHIS-D offers a groundbreaking opportunity: it is the first time a federal survey has asked about legal blindness and done so in a context that yields a plausible set of responses for a sample large enough to conduct a rich, if still constrained, analysis.

Why emphasize "plausible" here? Because there are strong risks of both over- and under-reporting. Indeed, we usually would recommend against asking a general sample whether they are legally blind; the term has a technical definition that depends on clinical testing. In less stilted terminology then found in the law, the definition is: Central visual acuity, equivalent to 20/200 or less (Snellen Chart measure) in the better eye *with best correction*, or a visual field of 20 degrees or less.

We assume that both dangers — over reporting and under reporting — did occur in NHIS-D, but we have reason to think the effects were minor. What exactly are those dangers, and why do we feel comfortable enough to rest so much weight of our analysis on the survey measure of legal blindness?

Consider *over reporting* first: Often we hear from well-meaning people, presumably seeking to show sensitivity to blindness issues, that "I'm legally blind without my glasses." But the definition reveals it is not possible to be legally blind if glasses will correct your vision to better than 20/200. We are not overly concerned about that type of response in NHIS-D for several reasons.

First, the question about being legally blind was preceded by the general question about serious difficulty seeing, in which the qualification "even with glasses or contact lenses on" was emphasized. This presumably "trained" respondents to realize that the question on legal blindness (which was asked only if they said they do have difficulty seeing, even with glasses on) should have the same qualification.

Second, after a person reported having "serious difficulty seeing, with glasses," he/she was asked what condition or problem is the main cause of the difficulty. The point is that the legal blindness question did not come out of the blue, so to speak, but rather was preceded by attention to seriousness of the condition and implied clinical/medical evaluation.

Third, the interviewers were provided with the definition of legal blindness to provide respondents, if needed.

Fourth, the questions that immediately followed a response of being legally blind made reference to specialized blindness accommodations (e.g., braille or readers). At that point, if a respondent wished to correct his/her answer about legal blindness, it would have been easy to do so. Taken together, all those features of NHIS-D reassure us that over reporting of legal blindness is not a serious concern.

Now, consider *under reporting*. That is probably a bigger problem. Epidemiological studies have shown (e.g., cited in Chiang et al., 1992) , and we must assume, that many people with legal blindness have not been clinically tested for it. Some may know or strongly suspect they would qualify but are "in denial." Some of those may even have answered "no" to the question about "serious difficulty seeing," although we expect that most people who would qualify as legally blind responded "yes" to that item. So while we expect that our analyses that single out "legally blind" are missing some people who should be there, most of them probably were captured by the serious visual impairment question. There is another wrinkle, however, because those people might have been considered "not seriously impaired" if they also reported that they did not expect the difficulty to last at least 12 months. Recall (from Chapter 2) that people who did report legal blindness were not put to the additional survey test of answering about the expected duration.

Two features mitigate our concern about under reporting. *First*, we focus on the working ages; it seems more likely that people 18-69 years old with suspected legal blindness have been tested (if only because of SSI/SSDI benefits), than people with onset at ages 70 or older, among whom the problems of denial, lack of incentive, or lack of awareness about the category "legally blind" are probably most acute.

Second, the national projection from NHIS-D is larger than previous estimates arrived at by various means other than national survey, notably by Chiang, Bassi, and Javitt (1992). The age groups do not match exactly; we estimate from NHIS-D for 1994-95 about 537,000 legally blind people, ages 18-69 years old, whereas the Chiang et al. (1992) estimate for 1990 was 471,000 for ages 20-74 years old. Since NHIS-D covers only the noninstitutional population and the latter estimate is not clear on that point, NHIS-D's larger estimate is additional assurance that any undercount is not large.

The "bottom line" is that we judge these data to be solid enough to stand up to the spotlight that we are putting on them in this analysis. We expect that spotlight also will be intense from many other quarters, because the first-time availability of a representative sample of legally blind working age people, with a wealth of information they reported about on their employment experience, is a long-awaited resource for policy and practice. Such data, for

example, can become a benchmark for assessing findings in research on workers in the National Industries for the Blind-affiliated businesses (Moore, Crudden & Giesen, 1994). Also issues around Social Security benefits could be illuminated with these data.

The Employment Connection: Full-time, Part-time Now, or Never

Employment at Phase 1 vs. Phase 2: In Chapter 3 (Table 3.1), we learned that the employment rate among people with serious visual impairment, ages 18-69, was only 42% when they were interviewed in Phase 1. The picture looked very different when we compared the younger and older groups (Table 3.3). Over half of the younger persons (18-54) with serious visual impairment were employed (54%), but the employment rate plunged to 22% among older persons, 55-69 years old.

Those findings from Chapter 3 are closely but not quite replicated in the upper left corner of Table 4.1. The new employment rates are 41% for all ages; 55% for ages 18-54; and 18% for ages 55-69. These new rates refer to people's employment status when they were interviewed at Phase 2, after a time interval that was anywhere from about 6 months to more than a year after Phase 1. We are shifting to the Phase 2 measure in this chapter because many of the aspects of "the employment connection" that we want to examine were asked only in Phase 2.

Employment connection overviewed. From the information-rich Table 4.1, we can summarize "the employment connection" of people who are legally blind compared to other visually impaired people, and of younger compared to older subgroups. Several strands of the rope that connects people to the work world are shown. The major strand is whether people are currently employed or not. If they are employed, a secondary strand is whether they work full-time *versus* part-time. If people are *not* employed, a secondary strand, but one that may be most important for individuals' chances at strengthening their connection, is whether they have ever worked for pay *versus* never worked for pay.

Table 4.1
The Employment Connection (Employment, Full-time/Part-time; Ever/Never Worked) by Serious Visual Impairment Status and Age: U.S., 1994-95
(Percentages)

	People with Serious Visual Impairment			People Who Are Legally Blind			People With Serious Visual Impairment, (Excluding Legally Blind)		
Employment (Phase 2)	All Ages %	18 - 54 Years %	55 - 69 Years %	All Ages %	18 - 54 Years %	55 - 69 Years %	All Ages %	18 - 54 Years %	55 - 69 Years %
Employed	**41**	**55**	**18**	**30**	**42**	**9**	**44**	**59**	**20**
Full-time	30	43	11	22	32	4	33	46	12
Part-time	11	12	7	8	10	5	11	13	8
Not Employed	**59**	**45**	**82**	**70**	**58**	**91**	**56**	**41**	**80**
Ever worked	51	37	75	58	43	86	50	35	74
Never worked	8	8	7	12	15	5	6	6	6
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

We make a few observations from the data here, and then go back more systematically to describe the various strands. Mainly, the data reinforce the fact that it is certainly not an oxymoron to discuss employment of legally blind people since almost one-third of them are employed (30%). Because we do not have data on age-at-onset of blindness, the fact that only 12% have never worked does not necessarily mean that all the others have worked *as blind* employees. However, even if those not now working who had "ever worked" did so as sighted persons, the fact of their prior connection to the work world is important. It is well-established that the best predictor of entry into work is prior work experience.

But the very same data can be read to say it is still a stretch to link work and blindness — after all, 30% employed among people who are legally blind is a minority, as is even the 44% employed among people with other visual impairment. And only 22% of legally blind persons work full-time (about three-quarters of those who are employed), as do just 33% of other visually impaired people (also three-quarters of those employed). It is only among other visually impaired, younger persons that the employment rate moves comfortably above the halfway point (59% employed) and even so, the percentage of other visually impaired *younger* persons who

work *full-time* is below the halfway point (46%).

That is an overview. Below, we go back over some of the strands in Table 4.1 more systematically.

Readers' Note: ***For a smoother reading experience:***

(A) In sections where we are contrasting the legally blind subgroup with others who have serious visual impairment, we will refer to the latter simply as "other visually impaired." That should not lead to confusion because the discussion is clearly about people with *serious* visual impairment.

(B) Because the discussion in this chapter depends so heavily on two issues of definition, we remind readers that in Chapter 2 we explained: *first*, how we define the group we are now calling "other visually impaired" to compare to people with legal blindness, and *second*, the guidelines we use for describing percentage differences as "small" or "large."

(C) There are several features of Table 4.1 and others to come that are worth noting. However, we will not discuss every comparison, to avoid detracting from the main aims of the discussion at that point.

(D) Table 4.1 shows "legally blind," "other visually impaired" and the combined group. Because 80% of the combined group consists of the "other visually impaired," the percentages in these two categories are very close. Therefore, after Table 4.1, we do not show the combined group.

How much difference does legal blindness make? Table 4.1 (reading across the top row) gives us the first shot with nationally representative data at answering a question of longstanding interest: Just how wide apart are the employment experiences — at least insofar as they are captured in statistics — of people who are legally blind, compared to others with serious visual impairment? Or, put differently and closer to the underlying policy issue: Is there a *vastly different disadvantage* from legal blindness, or do people with legal blindness seem to fit on the same continuum of employment experiences shared by others with serious visual impairment, differing only slightly, perhaps sometimes showing lesser disadvantage?

We have already presented, but not commented on, the first shot at an answer. As found in Table 4.1, people who are legally blind have a lower employment rate than do other visually impaired people, but the difference is small. Considering all ages 18-69, 30% of those who are legally blind are employed, compared to 44% of other visually impaired people — a difference of only 14%.

We checked whether that apparent disadvantage of legal blindness for employment could be explained away by an older age distribution among those who are legally blind. However, quite to the contrary, the legally blind group is *younger* on average than is the group of other visually impaired people.

What picture emerges when we compare employment rates of legally blind and other visually impaired people *within* age groups, as the lifespan perspective says we should? To answer, still staying in the top line of percentages in Table 4.1, we see that the apparent disadvantage of legal blindness relative to other visual impairment is greater among younger people (18-54 years) than among older ones. That contrast is also muted. There is a 17% difference in employment rates between younger people who are legally blind (42% employed) and their age counterparts who have other visual impairment (59% employed). The difference

between the vision status groups who are older is a bit smaller: among people 55-69 years old, 11 percentage points separates the employment rate among legally blind persons and other visually impaired (9% vs. 20% employed).

The fact that vision status seems to make more difference in employment for the younger than the older group is called, in the terminology of statistics "an interaction" effect (i.e., the interaction of age and vision status). The data are merely suggestive, but if the effect does exist, it is open to several interpretations. One possibility is that it is simply a hidden effect of age, if *within* the rather broad age span of 18-54, those who are legally blind are older. However, we checked the data and find that does not hold true; average age within the 18-54 year old group is similar for both vision status groups.

One explanation might be that the "work disincentive" of income benefits programs for which legal blindness is an automatic qualifier (if the person chooses to use it), affects younger workers more than older ones.

Another explanation (consistent with the prior one) stems from social norms about working that differ for the age groups. Because retirement is a socially-approved, even if not widespread option above age 55, whether people have impairments or not, those with lesser impairments may take the option more quickly than younger people with similar impairments do. In taking early retirement, older people with less serious impairments come closer to the non-working status of people with more severe impairments, who had less choice in the matter. This "easing" of the social difference between legally blind and other visually impaired persons may have positive impact in some ways, but it also can be seen as a strong life-stage barrier to maintaining an employment connection. Recall (Table 3.3) that employment is, after all, still the dominant life-role among the general public at those ages.

Full-time versus part-time employment. Bringing a microscope to Table 4.1, we can examine those who are employed more closely according to whether they work full-time or part-time.

The implications of full-time versus part-time employment are unclear without additional information. Part-time work may be a positive choice as one continues schooling or raising a family. Or it may be involuntary, indicating underemployment which not only limits income and benefits, but also chances for advancement. Besides the worker's preference, it is helpful to know whether the worker's industry or particular workplace is one in which part-time work is a frequent option or rather looked down upon. Furthermore, there is policy interest in the extent to which the earnings limitation under SSA disability income benefits programs is an incentive for part-time work. Pending future analysis of such relevant data, much of which does exist in NHIS-D, we can only speculate broadly about the results shown here.

The main finding is that while most visually impaired workers are working full-time, a high proportion are part-time - about 27% of those who are employed are part-timers (not shown). Not surprisingly, older workers are more likely to be part-timers than are younger workers.

Unfortunately, the comparison we would most like to make (i.e., between legally blind and other visually impaired workers), looking separately at the younger and the older age groups, is clouded by a limitation of the NHIS-D dataset. One of the four subgroups — legally blind, older people (55-69) who were employed — has too few people in the sample (only 15 people) to allow confidence in percentages describing them. That weakness will haunt much of the remaining analysis in this chapter.

However, for the younger groups of legally blind and other visually impaired workers, both have sufficiently large sample numbers to make this comparison. We find there is no difference — about 23% of both groups are part-timers. (That is unlike the earlier finding that younger legally blind people are less likely to be employed at all than younger people with other visual impairment.)

Of course, because a lower percentage of younger legally blind people are working, the overall percentage who are full-time workers is only 32%, compared to 46% of other visually impaired people who are full-time workers.

The fact that the relative percentage of workers who work part-time is the same among younger legally blind and other visually impaired workers is of particular interest; it suggests that the earnings limitation for receipt of disability income benefits is not a major factor in that younger group, since the influence of such restriction would be larger in the legally blind group whose eligibility is assured than in the group of other visually impaired workers. Unfortunately, a direct assessment of that inference must await future analysis when benefits status is brought into our dataset..

In future analysis, it would also be important to look more closely at the *number of hours* that part-time means in the groups we are comparing. Thinking both in terms of financial impact, and in terms of the strength of the employment connection, there is probably a meaningful difference between being near the high-end of the cutoff for part-time that we used (34 hours or less) *versus* being somewhere under 20 hours per week.

Ever worked/Never worked. Moving on to the majority of the visually impaired population (i.e., those who were *not* employed), and to a long-range perspective on the employment connection — whether they have *ever* worked or not — we shift our focus to the lower half of Table 4.1.

Of course the size of the percentages who were not employed (the 4th row of data) is simply the converse of those who were employed.

We find that only very small minorities of all subgroups have never worked, ranging from a high of 15% among younger people who are legally blind to only 5% of older legally blind persons, and only 6% of both younger and older people with other visual impairment.

Indeed, such small percentages who have never worked seem to be a bare minimum, especially in the older group which contains women of the generation when it was expected that women should not work for pay. Such low percentages strongly imply that most of the older cohort experienced their former employment as sighted people. It would be of great interest to know what percentage of each group has ever worked since they lost ability to see, but that would require a type of work history information — and information on age-at-onset of visual impairment — that we do not have in NHIS-D.

The 15% of younger legally blind people who have never worked does raise some concern, even though it is a small minority. Even if it partially consists of people who are still students planning to enter the labor market, most sighted students would have had work experience by their late teens. Again, future analysis might tease out useful insight about that group.

Short-term transitions to/from employment. Earlier we explained that information was collected on employment at Phase 1 and Phase 2. We hoped from this to examine a dynamic aspect of the employment connection — short-term transitions into and out of employment. This would be an information bonus resulting from a practical necessity faced by NCHS (sponsor of

NHIS-D) instead of an objective of the research design. That means it yields a weaker measure than if planned for. Employment status was asked in the first interview because that is an item in the "core" questionnaire (see Chapter 2.) NCHS then had to repeat the employment question in Phase 2 in order to trigger appropriate lines of detailed questioning about disability-related aspects of work. For example, asking about accommodations needed at one's job would be inappropriate for a person who is not currently working. For that person, the appropriate question is whether he/she could work if accommodations were made.

By cross-tabulating people's employment status at each interview, we could examine the *rates* and *direction* of transitions into and out of employment. (Data not shown.)

We will summarize the results, which contain no surprises; unfortunately, we cannot make all comparisons of interest again because the sample number of older legally blind persons who were employed at Phase 1 is too small. Therefore, we report on the total group of people with serious visual impairment, including those who are legally blind.

The only noteworthy amount of transition occurred among older (55-69) people who *had* been employed at Phase 1; more than one-quarter (28%) of them were no longer employed by Phase 2. By comparison, slightly over 10% of younger persons, 18-54, who had been employed at Phase 1 were not employed at the second time point.

Next, consider people who had *not* been employed at Phase 1: We find that the older group experienced almost no movement *into* employment (3% of people 55-69); among younger people, 18-54, movement into employment was, of course, higher (16%). The difference between the amount of movement into employment by younger and older groups was quite small, (i.e., 13%) but this is in part a result of the short time period for observation.

(Note: Exploring these transitions is of interest, but as a secondary priority because of the limitations in the data. Speaking technically, future analysis might get more power out of the information by conducting an analysis of variance, using as covariates the time interval between interviews, and age in years rather than grouped.)

Next, we start weaving in several other strands of the complex rope that makes up "the employment connection." The strands we have considered so far are *objective* indicators of the connection — that is, whether people are or are not working now, how much they work, and whether they have *ever* worked. The strands coming up bring in the *subjective* dimension — that is, whether people *perceive* that they *can* work, and whether they *want to* work. The measures available to us vary in how directly they tap into individuals' attitudes and beliefs.

"Work Limitation" - What does it measure? The most pervasive survey measure in research on work and disability is some variation of the two-part question:

> "Does any impairment or health problem now keep you from working at a job or business?"
>
> [IF "no"] "Are you limited in the kind or amount of work you can do because of any impairment or health problem?"

(That version was used in NHIS-D. This or quite similar versions are used annually in the HIS and have been used in the March CPS since 1991. A version also is used periodically in SIPP and were used in each of the decennial censuses 1970-90.)

We think of that question as a "subjective" measure; it taps the respondent's *perception*

of the severity of his/her impairment or health condition; and it also taps a *belief* about the nature of work requirements. In fact, although most survey respondents would be astonished to learn this, it can be said to reflect their *theory* about the relationship of work and disability.

That question was designed for, and is still often used as a reasonable stand-in for, an *objective* measure of the severity of people's impairments. Researchers actually defined "people with work disabilities" on the basis of positive responses to that question, and used the results as the denominator for calculating the employment rate of persons with disabilities. That approach adopts the "medical model" as a theory of the relation of disability and work. The medical model assumes that a person's biological condition ("health, disability or impairment") directly *causes,* and more importantly, *fully accounts for* constraints on his/her ability to work.

The "new paradigm of disability" — sometimes called "the environmental paradigm" — rejects that assumption. It posits that environmental factors, such as architectural or communications barriers found in the workplace or while trying to get there, interact with the severity of the individual's impairments, to determine whether one can work. A more extreme version posits that environmental factors *completely account for* whether a person with even the most severe impairments, can work.

National policy has accepted the new paradigm, while retaining the old, thus creating a crazy quilt of policy assumptions. ADA's Title I requirement of "reasonable accommodations" illustrates the new paradigm, as does the 1992 Rehabilitation Act's provision that applicants may not be considered ineligible for vocational rehabilitation (VR) services because their condition is "too severe." The income benefits programs, SSDI and SSI, embody the old paradigm of the medical model.

NHIS-D offers an opportunity to extend with empirical data a critique we had previously made through conceptual analysis of the "limitation of work activity" measure (Kirchner, 1996). The opportunity relies on having a survey measure of legal blindness in which we place confidence. The key is that legal blindness, unlike other disability classifications, has a set of objective criteria and a clinical test to identify those who meet the definition.

Therefore, logically, if the medical model is the correct way to understand the effects of impairment on ability to work, everybody who meets the legal blindness definition should be at least limited in their ability to work, if not prevented from working. More to the point, if the medical model prevails, then *non*medical social factors that typically affect labor market opportunity, such as education or race/ethnicity, would not modify the impact of impairment on whether one can work. If social factors do have such an effect, that is evidence that environmental factors in general interact with impairment to determine "work disability" or "limitation in work."

"And the winner is...." One can think of this part of the analysis as a competition between theoretical explanations of how impairments and work are related and Table 4.2 like the envelope at awards shows. Looking in Table 4.2 shows quite conclusively that the environmental model is the winner.

Table 4.2
Self-Reported "Work Limitation" Due to Health or Disability
Among People Who Are Legally Blind, by Social Characteristics: U.S. 1994-95
(Percentages)

	"Unable To Work"	"Limited In Work"	"Not Limited In Work"	Total
All	56%	14%	29%	99%
Gender				
Men	56%	17%	27%	100%
Women	55%	12%	33%	100%
Age				
18 - 21 years	39%	21%	40%	100%
22 - 49 years	42%	19%	39%	100%
50 - 54 years	66%	12%	22%	100%
55 - 59 years	73%	8%	19%	100%
60 - 64 years	72%	8%	19%	99%
65 - 69 years	72%	9%	18%	99%
Race / Ethnicity				
White / Non-Hispanic	53%	16%	31%	100%
Other	65%	10%	25%	100%
Education				
Less than High School	72%	6%	22%	100%
High School Graduate / Some College	51%	20%	30%	101%
College Graduate or More	32%	16%	52%	100%

Due to rounding, the percentages may not add up to exactly 100%

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

The first line of the table hints at the answer, even before making any comparisons between groups of legally blind persons who differ in terms of non-medical, social characteristics. The clue is in the third column: nearly 30% of legally blind people, ages 18-69 combined, report that they are *not* limited in work due to their impairment. Recall that the medical model, strictly speaking, predicts that everyone who is legally blind is at least limited in work and probably prevented from working.

The smallest percentage (14%) say they are limited "in amount or kind of work" because of their condition. The vast majority (86%) identify themselves at one extreme or the other — either unable to work or not limited in work.

The majority (56%) do say, as the medical model predicts, that they are prevented from working because of their condition. We may speculate about several factors that influence people who hold that belief. As we suggested earlier, many of those were sighted for much of their lives and grew up believing that blindness prevented working. Others, whether born blind or sighted, may believe work is possible for blind people but they have other conditions that are debilitating. Finally, and this is what we will begin to test next, it is also possible that barriers in their environment explain these negative responses, and conversely that access to resources explains positive responses.

To assess that possibility, admittedly somewhat indirectly, we now review the responses according to legally blind people's other characteristics that are either favored or disfavored in the labor market. Do those characteristics alter the impact of legal blindness on perception of ability to work? Put otherwise, do environmental factors, like employer and family attitudes, and resources that help solve transportation needs, that are more available to some people than others, make a difference in their perceived ability to work?

Table 4.2 shows that two social factors make a huge difference, and they are the ones we would expect — age and education. Others, gender and race/ethnicity, make no difference or very little difference to legally blind respondents' perception of their ability to work. The lack of difference according to those acquired characteristics is of interest in itself; the result is consistent with what we saw in Chapter 3, — there the comparisons referred to employment rates, which were very similar for men and women with serious visual impairment, and showed only a small advantage for people who are White, non-Hispanic over people in minority race/ethnic groups.

The effect of age is most evident by focusing on the percentages who say they are "unable to work" — ranging from a strong minority (39%) in the youngest group (18-21 years old) to a hefty majority (72%) at the oldest end (65-69 years old). Lest it seem that the point is diminished because we include a group who are older than the conventional retirement age of 65, it is of great interest to note that the same level appears in the 60-64 year old groups and even, going lower in age, the 55-59 year olds. Even more striking is the fact that those who are 50-54 years old hardly differ in their belief about their ability to work: two-thirds of them report they cannot work because of a health condition or impairment.

Perhaps most salient for the argument we are making here is the strong pattern that educational level imparts to the data, even stronger than age. Fully 40 percentage points separate the response pattern of people who have not graduated from high school and of people who are college graduates or higher (72% of the least educated, but only 32% of the most educated, perceive themselves as unable to work because of a health-related condition or impairment).

It is gratifying to focus on the same responses from the "not limited" perspective, because

we see evidence of the vision for the future, when blind people themselves will view their role in the work world as "presumed employed:" Over half (52%) of legally blind college graduates believe they do *not* have a work limitation because of their impairment!

However, from a policy research point of view that result is actually disturbing. It hints at the likely effect of the fallacy embedded in traditional use of the "work limitation" measure to *define* "people with disabilities," and then observe the employment rate in that group. The result shows that these legally blind persons would have been left out of the denominator of the employment rate among people with disabilities. Of course they would also be left out of the numerator, and that's the problem, because the rate of employment in this group is much higher than applies to those with less education, who more often say their impairment limits them.

We can add depth to this picture by pulling in information about whether respondents have other impairments or health conditions besides legal blindness. (To do this we are jumping ahead, briefly, to a later point in the overall story unfolding in this report. Chapter 5 will systematically examine the effects of multiple impairments and perceived health on the employment connection.)

We classified people according to whether they reported any serious condition besides legal blindness, and then created two counterpart tables to Table 4.2, one for legally blind people with multiple impairments and one for legally blind people *without* other serious (nonvisual) impairments. (See Chapter 2 for the definition of "other serious impairments.") Unfortunately, we cannot examine all the detail in those counterpart tables because many of the subgroup samples become too small when we take so many factors into account. Indeed, since the overwhelming majority (80%) of legally blind persons do have another serious impairment, there are only 64 people in the unweighted sample base of legally blind people with no other impairment.

The effect of additional impairment on perceived ability to work is powerful — there is a fully 50% spread between the percentage of people with multiple impairments, who say they are not limited in work, and people with only legal blindness who say the same. That large an effect is rarely found in social research.

To be specific (data not shown); among people with multiple impairments: fully two-thirds (66%) say they are unable to work; a few (14%) say they are limited in amount or type of work; leaving a small portion (19%) who, even being legally blind and having other impairments, nevertheless say they are *not* limited in ability to work due to their health or impairment.

The "Wow!" response comes here: Among legally blind people with no other impairment, only 15% say they are unable to work because of their impairment, only 17% say they are limited in work for that same reason; and fully 68% say they are *not limited in type or amount* of work due to their impairment.

As we now prepare to move on to the next strand of the employment connection, — evidence of interest in working — it is important to mention that the "work limitation" measure was used in NHIS-D as a basis for selecting lines of further questioning.

Interest in working (if not employed). From a rehabilitation counselor's point of view, one of the main barriers (or facilitator, as the case may be) to work is the client's motivation to work. Some professionals would consider motivation the bedrock of anything one needs to know about people's "employment connection."

Kirchner et al. (1997), in a survey of blind and visually impaired adults in Illinois, asked

those who were not working a direct question about their "interest in working for pay." Answers to that question proved critical to understanding an array of issues in the analysis of work-related attitudes and behaviors.

Motivation also surfaced as important, though indirectly, in a recent survey of SSDI beneficiaries who had returned to work, conducted by the GAO (U.S. General Accounting Office, 1999). The study found that "encouragement by family, friends, coworkers and health professionals" was one of two primary factors and high self-motivation was a secondary factor based on mentions by the former beneficiaries as significant in their achieving the extremely unusual status of leaving the SSDI rolls.

From the policy rather than the practice perspective, an individual's "interest in working" is the counterpart to "work incentives" (or "disincentives"), from the system point of view. It is a continuing challenge for researchers to account for the extremely low response to SSA's "work incentives," given that, for example, the 1994 Harris/NOD survey found that 79% of people with disabilities who were not working "would rather have jobs," and within that group, 42% agreed they "could work if given a suitable job" (cited in Kaye, 1998a).

Lest this preface raise reader's expectations too high about what light this report will be able to shed on "interest in work" among people with serious visual impairments, we hasten to make clear that it will be very limited. We are laying the groundwork, however, for what we consider a high priority for further analysis of NHIS-D. Our exploration so far has revealed (a) that there is no direct question asking about "interest in work," but that (b) many items can serve as objective or subjective indicators of that concept, and (c) that constructing an analytic variable from those indicators is extremely complex because many paths of questioning were used in order to capture people's employment circumstances (there are 16 different subcategories to describe "work status").

What we do have to report must be understood in terms of the specific indicators that we used, and which subgroups of people were asked those questions (90% of people who were not employed were asked at least one of the four questions we combined in this measure. For details, refer to Chapter 2). The key point here is that *looking for work* (i.e., respondent reported having looked in the past 2 years), doing so now, or planning to do so soon is the major component of our measure. We consider that to be a stringent measure of possible interest in work, even though it leaves to the respondent how to define "looking" and "planning to look."

Now, cautiously, the preliminary findings. The results would suggest that people with serious visual impairment, who are not employed, have a very low "employment connection," if one were to rest the case entirely on this indicator — which we strongly advise one should not do. Only 14% of those included in the combined measure, reported active interest in working as indicated mainly by having looked for work recently or planning to do so soon. Interestingly, there is no difference on this measure between people who are legally blind and others who are visually impaired. Active interest is, as expected, considerably higher among younger persons (24%) than older ones (only 6%!), again with no difference within age groups between people who are legally blind or other visually impaired.

Without question, we will want to examine in the future the many other clues to "interest in working" that might apply to the 76% of younger persons who were not working and did not emerge as interested, according to this very constrained indicator.

Barriers and facilitators to work. NHIS-D asked a rich assortment of questions about what respondents view as disability-related barriers to their working, and also whether the

provision of accommodations, or their absence, affects whether they are working or could be working. While all of that information is valuable in its own right, it is not clear to us yet whether and how it should be handled in further analysis of "interest in work," and consequently, in the broader concept we have been exploring here: "the employment connection" for people with serious visual impairment.

A systematic review of those measures awaits our future analysis. For present purposes, we chose to examine just two employment-related kinds of experience, one that can be viewed as a barrier (i.e., the experience of discrimination); and the other as a facilitator (i.e., receipt of vocational rehabilitation services). Both topics are obviously of great interest to us; it is therefore doubly frustrating that the results we obtained do not permit us to draw even preliminary conclusions nor do they promise to yield much mileage in future analysis. First we summarize the results and then explain what the limitations are for analysis.

Discrimination. The questions asked were geared to whether respondents were currently employed or not, and referred to whether they had experienced in the past 5 years any of some specified types of job-related disadvantage (e.g., being fired, told to resign or refused a promotion; see Chart for details) because of an "ongoing health problem, impairment, or disability." Reports of such experiences would of course be important to analyze; however, because the NHIS-D did not ask about experiences of discrimination in *finding* a job, the data are inadequate for our purpose. For example, in our 1989 survey in Illinois, blind and visually impaired respondents reported that discrimination was one of the major problems in finding jobs, although they tended to see it as a bigger problem for others than in their own experience (Kirchner, Harkins & Esposito,1991).

The results from NHIS-D reflect the serious limitation that people were not asked whether they had experienced discrimination in seeking a job. (Data not shown.) Over 90% of respondents report that they have not experienced any of the specified types of discrimination in the past 5 years. That percentage does not vary notably between those who are legally blind *versus* other severely visually impaired, or employed *versus* not employed, nor younger *versus* older. (With results that one-sided, it is hard mathematically to find differences large enough to note.)

Receipt of VR. Only a small minority (about 20%, ages 18-69) of respondents reported having received VR services, a figure that includes private as well as public programs. The finding is consistent with other research, but it seems likely that all such research underestimates the actual amount of VR received. There is reason to believe that even with the good definition of VR that was given in the NHIS-D interview, and the fact that the specific types of services were asked directly, rather than first screening with a general question, some people do not realize that services they did receive fit the types of classifications they are asked about.

As we would expect (Table 4.3), the rate of service receipt was somewhat higher for people who are legally blind, than for those with other visual impairment (still, only about one-third of legally blind respondents reported receiving VR), and slightly higher for younger people than older ones.

We can imagine that readers might jump to a conclusion that is probably not justified, when they compare the rates of VR reported by people who are employed and those who are not. This is an instance when statistics out of context can be dangerous.

Table 4.3
Receipt of Vocational Rehabilitation by Serious Visual Impairment Status, Age, and Employment: U.S., 1994-95
(Percentages Who Received Vocational Rehabilitation)

	People who Are Legally Blind		People with Serious Visual Impairment, (Excluding Legally Blind)	
Employment (Phase 2)	18 - 54 Years	55 - 69 Years	18 - 54 Years	55 - 69 Years
Employed	30%	*a*	18%	11%
Not Employed	44%	26%	31%	14%

Notes: *a* Unweighted base less than 20 people

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

The finding is that rates of receipt of VR are higher in all subgroups of those who are *not* employed compared to those who are employed.

We do not believe the correct interpretation of the link between receiving VR and not being employed is that VR somehow is a deterrent to work. Other factors, which can be checked in future analysis, may account for the result.

First, it is likely that there is a complex curved relationship between people's socio-economic background — meaning their prior access to resources (e.g., financial, educational, social support) — and their use of vocational rehabilitation. That means, if you draw a line describing the percentages of people who receive vocational rehabilitation classified according to whether they had access to resources, just those low in resources, and moving along to people with very high resources, the line would curve upwards from both ends. Thus, it is possible that people with low to middle resources are most likely to receive vocational rehabilitation and also to be those who are not employed (Kirchner, 1984). *Second*, persons with recent onset, who have lost jobs, may still be seeking or getting medical care for their condition.

With that background, the results are provocative. Among younger legally blind persons, Table 4.3 shows that of those who are employed, only 30% report having received VR services, whereas among those not employed, 44% report having received VR. Thus, a majority in both those groups of younger persons have not (or do not recall having) received VR. (Small sample size prevents the same comparison for older legally blind persons.) A similar contrast applies to employed and not employed younger people with other visual impairment, although the level of having received VR is lower. For older people, whether legally blind or other visually impaired, there is no difference in the extent of VR between those who are employed or not employed; for both groups, the levels are quite low.

The findings on VR are a matter of concern in substantive terms — they suggest that many people who presumably could benefit from services are not reached, or reject the opportunity. There is also a practical concern for this research analysis: because the percentage who report having received VR is so low, there are small numbers in the sample for study of many important questions about VR services that were received.

Working vs. other life role options. Where does working stand in the "lifespace" of people who are legally blind or other visually impaired? Table 4.4 shows that, if we count those who are younger and are students as employment-oriented, just about one-half (52%) of younger legally blind persons are employment-oriented: 41% working and 11% students. The work-oriented figure rises slightly (62%) among younger persons who have other visual impairment: 57% working and 5% students. The remaining nearly 20% of both vision status categories who are younger are people counted as "homemakers."

Lifespan issues surely are important in the striking contrast of major roles reported by legally blind and other visually impaired *older* persons. For them, working is the major role of only a small minority; the student role diminishes to a vanishing point; homemaking is a

Table 4.4
Major Life Role By Serious Visual Impairment Status and Age: U.S., 1994-95
(Percentages)

	People Who Are Legally Blind		People With Serious Visual Impairment, (Excluding Legally Blind)	
	18 - 54 Years %	55 - 69 Years %	18 - 54 Years %	55 - 69 Years %
Working	41	15	57	23
Homemaker	18	23	19	29
Student	11	1	5	*a*
"Something Else" [b]	30	61	19	48
Total	**100%**	**100%**	**100%**	**100%**

Notes:
a Less than 1%
b Includes "unknown" - at most, 1% of the sub-category

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

slightly more prevalent role than working. The bulk of responses are in the unspecified category, "doing something else." The latter accounts for over 60% of older (55-69) legally blind persons and nearly one-half (48%) of those who have other serious visual impairment.

Ask a busy person... It has been our contention in print (Kirchner, 1995) that the productive contribution of people with disabilities is under reported because there is no information available about their engagement in volunteer work. NHIS-D made an attempt to fill that information hole.

The results for people with serious visual impairment (we have not examined this for people with nonvisual impairment) belie our expectations. *First*, the percentage who report volunteering is quite low, below 20% of the whole age span under study here, being slightly higher among younger people than older ones.

Table 4.5
Rate of Volunteering by Visual Impairment Status, Age, and Major Life Roles: U.S., 1994-95
(Percentages Who Did Volunteering)

	People Who Are Legally Blind		People With Serious Visual Impairment, (Excluding Legally Blind)	
	18 - 54 Years	55 - 69 Years	18 - 54 Years	55 - 69 Years
Working or Student	26%	27%	24%	17%
Homemaker	18%	16%	17%	11%
"Something Else" [a]	9%	7%	17%	8%

Note: a Includes "unknown" - at most, 1% of the sub-category

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

Within age groups, interestingly, there is no difference between legally blind and other visually impaired people in the percentage who report they had done volunteer work in the past year.

Of course, one reason for interest in volunteering by people with serious visual impairment is to gain some understanding of the substantial group whose major role was "something else." We had not expected — but on reflection realize we *should* have expected it — the pattern that pervades Table 4.5, which shows the rate of volunteering according to major life roles.

Rather than serving as an explanation of what people who reported doing "something else" actually were doing, we see there that the highest rates of volunteering were reported by

people who reported either working or being a student; and a little lower among people who reported keeping house as their main activity the past year. Indeed, volunteering does little to explain the activities of people who reported "something else," since it was lowest in that group.

On one hand, this is confirmation of the adage well-understood by people who organize volunteer activities in the general public - "Ask a busy person if you want to get something done."

On the other hand, that adage might in fact be part of the explanation for the low percentages of people with disabilities who do volunteer work. Perhaps mainstream coordinators of volunteer activities have low expectations or never thought of people with disabilities as a resource, and therefore do not call upon them.

But the main answer, we suspect, is in the health arena. The next chapter examines health problems that overwhelm the time of those who cannot engage in productive roles of working, studying or maintaining a household.

CHAPTER 5

Too Sick to Work? Facing Up to Health Issues in Employment of People with Serious Visual Impairments: Legally Blind vs. Others

Health Insurance vs. Health Status

Is income really <u>not</u> the issue? Public policymakers' alarm over rapid growth in SSA's disability income benefits programs is fueling a spate of research to tease out the causes. From an almost bewildering array of economic, demographic and psychosocial factors under study, one of the findings is rather controversial: it suggests that income benefits are not, in fact, the main incentive for people to seek income benefits, and especially not the main incentive for them to stay on the rolls indefinitely (Mashaw & Reno, 1996; National Council on Disability, 1996; Yelowitz, 1998).

The evidence points instead to deep-seated fear of loss of Medicare and/or Medicaid coverage. That fear overrides the various incentive programs that SSA has put in place to cushion any negative income consequences of leaving the rolls. The fear of losing access to health insurance applies to younger people with disabilities as well as older ones, and people who are not currently heavy users of health services as well as those who are.

Healthy people with disabilities have good reason for the fear. *First,* on average, people with disabilities are heavier users of health care by far than people without disabilities, so even if they are not users now, and many are not, most know they are at high risk to become heavy users in the not-distant future (Max, Rice & Trupin, 1996; National Council on Disability, 1996; Trupin & Rice, 1995). *Second*, because people with disabilities are likely to obtain part-time, temporary, or low status jobs, health insurance is often not even offered. *Third*, even if they obtain jobs with employer-provided health insurance, they probably will not be accepted by the insurer because, by definition, they have "pre-existing conditions" (LaPlante, Rice & Wenger, 1995; McNeil, 1993; Pope & Tarlov, 1991).

In principle, the best solution would be indirect. That is, the nation would adopt universal health insurance that covers everyone, regardless of age or disability. That solution has an extremely poor prognosis. Instead, piecemeal policy options are being designed to address the lack of health insurance as a deterrent to employment by people with disabilities who are in generally good health.

Too sick to work? But even if the health insurance problem were solved, two questions remain, a substantive one, and on its heels, a research question about how to get the answer to the first question. The substantive question: How does *health status* impact employment of people with serious impairments? And the research issue: How can we conceptualize and measure health issues without invoking the hazards of the medical model that we have worked so hard to avoid when considering the employment impact of impairments? (Note: Those questions apply to employment issues for all people with impairments, but we will continue this discussion in terms only of people with legal blindness or other serious visual impairment — the groups we focused on in Chapter 4.)

When we introduced the framework for this study, we speculated about why so little empirical attention has been devoted to the relationship of health and employment status in the field of disability services and advocacy, and why attention is now turning in that direction.

Recent grants by NIDRR for Research and Training Centers focusing on service delivery issues including access to care in medical rehabilitation and general health care, will leverage an expanded knowledge base in this domain.

Evidence for the importance of health status and health care in individuals' employment decisions comes from a recent survey by GAO (1999). The study had a small, nonrepresentative sample, but a strategic one because they were of the extremely rare breed of SSDI beneficiaries who had left the rolls for employment. (In a typical year, fewer than one-half of one percent of beneficiaries make that transition.)

GAO identified two primary factors that facilitated those workers' moves off the income benefits rolls; one of the two was "health interventions." (We mentioned the other one in Chapter 4 -- encouragement by family and others.) Those two factors stood out above a list of other factors mentioned much less often. Interestingly, those less-frequently mentioned factors include the kinds of things that rehabilitation professionals and advocates tend to highlight, such as flexible work schedules, job-related training, assistive devices, among others.

A "knotty question." As the field turns attention to the understudied topic of health and work for people with disabilities, the "knotty question" emerges that we hinted at earlier. It turns out to be very tricky to untangle what we mean conceptually by health and health care, on the one hand, clearly distinguishing them from impairment and accommodation on the other hand, especially when we also consider another dimension of health and functional status — multiple versus single impairments (or "comorbidities").

GAO's (1999) report gives a summary of the kinds of things it means by "health interventions:"

> "Health interventions — such as medical procedures, medications, physical therapy and psychotherapy — reportedly helped beneficiaries by *stabilizing their conditions* and consequently, improving functioning" (p.7)

That seems to be a too narrow view of health status, although "stabilizing their conditions" may be a way to state that acute correlates of some impairments, such as weakness, fever, pain, and other debilitating symptoms, can be so demanding of attention and time that they override the ability to work — in short, people can be too sick to work.

We will not delve further into definition at this point, relying on an implicit understanding that most people seem to share, since the public regularly responds without apparent confusion to a standard health survey item such as NHIS-D used, which we will rely upon:

"Would you say that your health in general is excellent, very good, good, fair or poor?" Not only do people answer that question with ease, but as we noted in Chapter 1, answers to that question have been shown to correlate very well with reports of objective indicators of health status, such as "bed days" due to illness and hospital stays.

It's all relative. Wolfe (1998), an economist, in a comment on Yelowitz's (1998) analysis of growth in the SSI rolls, remarks that "Blind persons tend to be healthy...." Her observation relies, apparently, on Yelowitz's data showing for 1987-92 that the average annual Medicaid benefit under the "SSI-Blind" program was considerably lower than for "SSI-Disabled" and slightly lower than for "SSI-Aged." Be that as it may; the present analysis does not draw conclusions about the health of blind people relative to any other disability group.

We do rely on a background of awareness that most major causes of blindness and other visual impairment are not terminal conditions, and are borderline as to whether they should even

be classified as chronic diseases (e.g., glaucoma, cataracts, macular degeneration, retinitis pigmentosa). On the other hand, diabetes, a major cause of blindness especially in the working ages, typically poses serious health problems; also it is likely that by the time an individual becomes blind from diabetes, he or she has also developed other impairments (National Advisory Eye Council, 1998; Tielsch, 1994). People who were born blind as a result of prematurity or low birthweight are also likely to have multiple impairments

With that extremely sketchy overview of the epidemiological context for health concerns, we turn to the data from NHIS-D.

Poor health, poor employment rates. If all you know about a legally blind working aged adult is that he or she is in poor health (to get that information, all you need do is ask him or her), according to Table 5.1, you can with almost complete assurance know that he or she is not employed (i.e., a mere 1% were employed). While poor health is not as powerful a predictor of the employment rate of other visually impaired people (13% in poor health were employed), in fact health status apparently has a somewhat greater impact on the employment rates of people with visual impairment who are not legally blind, than on those who are legally blind.
To be specific: the gap between employment rates of visually impaired people who have excellent/good health (66% employed) and those who have poor health (13% employed) is larger than the gap in employment rates between legally blind people in excellent/good health (42% employed) and those in poor health (1% employed).

Table 5.1
Employment Rates (Phase 2) by Serious Visual Impairment Status and Health Status, Ages 18-69: U.S. 1994 - 1995

Health Status	People Who Are Legally Blind	People With Serious Visual Impairment, (Excluding Legally Blind)
Excellent to Good	42%	66%
Fair	22%	29%
Poor	1%	13%

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

Possibly factors other than health clamp a heavier lid on the employment rate of people who are legally blind than of other visually impaired people. We see in Table 5.1 that even among people with excellent/good health, only 42% of those who are legally blind were employed, compared to fully two-thirds (66%) among other visually impaired people. Since we

already explained in Chapter 4 that those who are legally blind average a somewhat younger age than other visually impaired people, age is not the explanation.

We by-passed comparing age groups in order to show the strong impact of health status on employment rate in the simplest terms (Table 5.1). But it is both necessary, and revealing, to bring the lifespan telescope back on this journey.

A healthy majority. The information in Table 5.2 gives some credence to the comment we quoted from Wolfe (1998). Among people who are legally blind, ages 18-69, we find a healthy majority — in two senses of the phrase! That is, 60% of legally blind working aged people report they have excellent/good health. Only 18% of those who are legally blind, ages 18-69, reported poor health. Of course, younger people are considerably more likely to report excellent/good health: Among legally blind persons ages 18-54 years, fully two-thirds (66%) reported excellent/good health. That percentage drops among older legally blind persons, but it

Table 5.2
Health Status by Serious Visual Impairment Status and Age, U.S.: 1994-95
(Percentages)

	People Who Are Legally Blind			People With Serious Visual Impairment (Excluding Legally Blind)		
Health Status	All Ages %	18-54 Years %	55-69 Years %	All Ages %	18-54 Years %	55-69 Years %
Excellent to Good	60	66	48	52	61	37
Fair	22	20	25	24	20	31
Poor	18	14	26	23	18	32
Total	**100%**	**100%**	**99%**	**99%**	**99%**	**100%**

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

stays relatively high: nearly one-half (48%) of older legally blind persons, 55-69, also report their health to be excellent/good. However, in this older group, one-quarter (26%) report "poor health."

Now comparing with other visually impaired people: Only a bare majority (52%) of other visually impaired people, 18-69, report the best of health. And it is surprising that within each of the broad age groups, other visually impaired people seem slightly less healthy than those who are legally blind; the differences are small and worth noting only because the data lean consistently in that direction.

Analysis Note: *Subjective and Objective Health Indicators*.

Before we settled comfortably on the self-perceived health responses as a strong enough measure to carry this analyses, we looked at how well that measure related to (presumably) more objective indicators: (a) "Hospital Stays," people's reports of whether or not they spent at least overnight in a hospital during the past year, and (b) Bed Days," their reports of the number of days during the past year on which they had to stay in bed for more than half a day due to illness or injury, including nights in a hospital. We found that the relationships between self-reports of health status and both hospital stays and bed days were strong. Health status was a Phase 1 question, so we were able to look at those relationships within the general public, and then separately within the group with serious visual impairment and the group with serious nonvisual impairment.

Of course, none of those comparisons showed a perfect 1:1 relationship. That is, some people who reported excellent/good health also reported bed days, and some people with poor health reported they had no bed days. One reason is that hospital stays includes such things as normal childbirth and acute, curable conditions like severe tonsillitis.

There also may be a psychosocial effect, which Haber (1970) long ago labeled "capacity devaluation." "Capacity devaluation" means that someone rates his or her own health or functional abilities lower than does someone else with the same objective level of health or ability — that is, the former *devalues* his or her own capacity. In Haber's research, older age led to capacity devaluation of a set of physical functional abilities, such as lifting, bending, etc.; Haber attributed that to the fact that society-at-large devalues the abilities of older people. In the here and now of the NHIS-D data, it appears that both age and serious impairment may lead to capacity devaluation of one's health.

We reach that conclusion from a table (not shown) that compared health status within the general public and within each impairment status group by age, looking only at people who reported they had had *no bed days* the past year. For ease of talking about it here, we will describe the combined health categories of "fair and poor:" In the general public, among younger people with *no bed days*, only 3% said their health was "fair/poor," compared to 9% of older people. But in the group with serious visual impairment, among the younger group with *no bed days*, 25% said their health was "fair/poor", and that figure rose to fully 44% among older visually impaired persons. (As typical, the group with nonvisual impairment was in-between.)

That pattern might result from the kind of societal devaluation that people then learn to attribute to themselves, as we suggested above. But in addition, and perhaps as the main interpretation, the measure "Bed days" may leave out important indicators of poorer health that apply more to older people than to younger people, and more to people with serious impairments than to the general public. It is easy to think of such things: the need to take many medications; weakness or pain that is not helped by staying in bed but does prevent one from getting out of the house; and so on. Whatever the case, keep in the back of your mind as you read ahead, that "poor health" for people with serious impairments probably reflects a mix of low social expectations for their health, along with debilitating symptoms that do not involve bed rest or hospital stays, and are less present in reports of poor health by the general public.

Beginning to put it together. We are finally in a position to examine employment with both of the main analytic tools in hand — lifestage (age) and health status. We have shown that each factor appears to have a strong effect on employment and on major life roles of people who

are legally blind and of others who are visually impaired. But there has also been an unstated frustration as we looked at only one factor at a time, for example, at the effect of health on employment rates. Table 5.1 leaves us wondering: Since age and health are related, is what we are seeing mainly a result of age or lifestage, not health status?

In Table 5.3, we show employment rates within groups each of which is now identified both by lifestage (age) and by health status. There is much information in the table but we can zoom in first on the number in the upper left corner. That number, 53%, should be familiar. It is in a sense the punch line of the story that we began to tell in Chapter 1. We foretold there that it is possible to find in our society a broadly defined subgroup of people who are legally blind, among whom a majority is employed. Here we can locate that outcome in a very broadly defined "younger" group — extending from 18 years up through 54 years of age — who are in at least

Table 5.3
Employment Status (Phase 2) by Serious Visual Impairment, Age, and Health Status: U.S., 1994-95
(Percentages Employed)

	People Who Are Legally Blind		**People With Serious Visual Impairment, (Excluding Legally Blind)**	
Health Status	18-54 Years	55-69 Years	18-54 Years	55-69 Years
Excellent to Good	53%	16%	76%	36%
Fair	33%	6%	43%	13%
Poor	3%	0%	19%	7%

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

reasonably good health (based on their rating of their own health as "excellent," or "very good," or just "good").

Other messages emanate from Table 5.3. The enormous difference that both age and health status make for employment is conveyed by looking at the group of legally blind people that contrasts most sharply to the younger, healthiest group just discussed; that is the older group who are in poor health. The result is stunning, and indeed, should not be taken completely at face value; in this sample, it turns out that *no one* in that category is employed. But we assume that in the subpopulation of legally blind people that this small sample represents there is a small percentage of legally blind people, in the age range of 55-69 years who are employed even though they are in poor health.

Throughout Table 5.3, we see the influence of age within health statuses, and conversely,

of health within age statuses. Thus among legally blind people in excellent/good health, those who are older are much less likely to be employed than those who are younger, and that holds too for those who say their health is "fair."

It is also important to realize the enormous effect of health among the younger group: only 3% of that group is employed if their health is "poor." We recognize, however, that age may affect that result also, because of the broad age range involved. That is, those who say "poor" health may be closer to the 54 year old end of the range. We will present at the close of this chapter another statistical test that helps to clarify the relative effects of age and health on employment of people with serious visual impairment.

The right-hand half of Table 5.3 shadows the picture we have just described: People with other serious visual impairment experience somewhat higher levels of employment when age and health status are both taken into account. Thus, in the younger, healthiest group of people with other visual impairment (not legally blind), fully 76% are employed; if they are in excellent/good health but in the later lifestage, only 36% are employed. Looking at those in poor health even though in the younger age range, only 19% of people with visual impairment are employed, and if they are both older and in poor health, the figure dives to 7%.

Picking up another strand of the story that we began in earlier chapters, what more can we deduce about life roles — specifically about the possibility of "rolelessness" — given that we now know both lifestage and health status of people who are legally blind or have other serious visual impairment? Table 5.4 — the counterpart to Table 5.3 — provides a partial answer. It shows first that reports of "working" as the major life role closely match the percentages who reported they were employed at phase 2, reflecting the same age and health effects. So what we gain from Table 5.4 is a sense of the roles of people who are *not* working, looking at their reports according to age, health and visual impairment groupings.

Table 5.4
Major Life Role by Serious Visual Impairment Status, Age, and Health Status, Ages 18-69: U.S. 1994-95
(Percentages)

People Who Are Legally Blind

	18-54 Years			55-69 Years		
	Excellent/ Good %	Fair %	Poor %	Excellent/ Good %	Fair %	Poor %
Working	51	32	5	29	7	1
Keeping House	15	28	22	24	37	23
Going to School	12	3	3	a	a	a
"Something Else"	22	37	70	46	56	76
Total	**100%**	**100%%**	**100%**	**100%**	**100%**	**100%**

People With Serious Visual Impairment, (Excluding Legally Blind)

	18-54 Years			55-69 Years		
	Excellent/ Good %	Fair %	Poor %	Excellent/ Good %	Fair %	Poor %
Working	72	44	19	39	18	7
Keeping House	15	24	30	27	37	27
Going to School	5	6	2	a	a	a
"Something Else"	8	27	49	34	44	66
Total	**100%**	**101%**	**100%**	**100%**	**99%**	**100%**

Due to rounding, the percentages may not add up to exactly 100%

Note: [a] = Unweighted base less than 20 people

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

To focus first on the minority who are keeping house, we see that similar proportions of people who are legally blind and others with visual impairment report filling that life role, depending on their age and health.

Now for the item of main interest in Table 5.4. Overall, poor health is a powerful explanation for the category "doing something else" at each age level: among legally blind younger people who report poor health, 67% are found in the "something else" category, and fully 85% of older legally blind people in poor health appear to be occupied largely by health needs.

Among others with serious visual impairment, the effects of poor health seem less "handicapping" (in the particular meaning of that term which refers to the societally-mediated effect of one's physical condition on the opportunity to perform social roles). Thus we see that 66% of older visually impaired persons in poor health report they are doing "something else," and a *relatively* small percentage (48% doing something else) among younger persons in poor health.

The demands of illness have been summarized in the concept of "the sick role." Societal norms for being sick require being a good "patient," and relinquishing both the obligations and the rewards of usual roles in order to try to get well. This certainly can be experienced as rolelessness if illness persists over a long period. It has been a major thrust of disability activism, and a major reason for rejecting the medical model of disability, to disavow society's assumption that the "sick role" applies to having long-term impairments. (This was discussed by Safilios-Rothschild as early as 1970.)

But what if the person with impairments *is* sick or sickly for long periods? That does seem to apply to those who say their health is poor or fair, *and* their major activity over the past year has been "something else" besides working, keeping house, or going to school.

We are left with a now narrowed-down uncertainty, and concern, about people who report they are "doing something else" and also say they are in excellent/good health. Among legally blind younger people in such good health, 20% remain in that nonspecific life role category, as do fully 48% of legally blind, very healthy people ages 55-69. The percentages of healthy younger and older people with other serious visual impairment who remain in the nonspecific role category are much lower because, as we have seen, they are more likely to be working.

Another dimension: Multiple vs. single impairment. Having information about the combined effect of age and health status has moved the analysis a long way toward being able to zero in on where the employment problem is most severe, or put positively, where opportunity exists to improve employment rates of people who are legally blind and others who are visually impaired. But there is another important way to look at an aspect of health status — specifically whether people have only serious visual impairment or in addition have one or more other serious impairments.

First, importantly, and as expected, the majority of people with serious visual impairment, ages 18-69, do have another serious impairment. (Please refer back to Chapter 2 for how additional impairment was defined.) The overall rate of multiple impairment in the combined group with serious visual impairment is 67% — consistent with, but on the high end of, what is generally found. The rate of multiple impairment is notably higher in the group who are legally blind (80%) than in the other visually impaired group (62%). This is in spite of the somewhat younger age of those who are legally blind.

In a table not shown here, we find an even more dramatic effect on employment rates

when we take both multiple impairment status and age group into account. Fully 80% are employed among legally blind persons who are younger (18-54 years) and without any other serious impairment! That is about the same percentage as among other younger persons with only a serious visual impairment — 76% employed. And most stunning, that is essentially the same as the general population of the same age group — 82% employed (see Table 3.3).

With that powerful a finding, why did we not make it the linchpin of this analysis, instead of focusing on the more modest 53% in the younger, healthy group? Mainly, because of the need for caution since the classification of single or multiple impairment is so dependent on the particular way we treated the complex information available in NHIS-D. Although we can feel confident about the general size and direction of comparisons we are making on the basis of multiple impairment, we are more leery of trumpeting a particular percentage figure, especially one that seems so dramatic — since it might be somewhat lower with different, equally reasonable, decisions about what to count as serious impairment. (In further analyses we will test those possibilities.)

In any case, there is great but not total overlap of health status and impairment status. Among younger and older persons, regardless of vision status, if they have only the visual impairment, the gap is large between the percentages who say their health is excellent/good when compared to persons who have multiple impairments. About 40-50% more of those with a single impairment report excellent/good health than do persons with multiple impairments, within age groups. (Data not shown.)

Putting it together differently. Moving toward a close, we now present data on employment rates of subgroups who are legally blind or have other serious visual impairment, considering both their health status and their multiple impairment status. (Because of small sample numbers, we cannot, unfortunately, also include the age factor here.)

Table 5.4 is structured somewhat differently from prior tables, fulfilling a somewhat different objective from heretofore. Til now, we have been highlighting differences in employment rate between groups that differed, say, in age and health. The intention of showing such differences has been to uncover meaningful factors that affect the employment experiences of people with visual impairment. We focused on age and health/multiple impairment to describe subgroups that are (a) relatively easy to identify and (b) have not received much attention in the research literature of either the rehabilitation field or the disability activist movement. For the purpose of thinking about how group differences might translate into better understanding of the meaning of the role of employment in the lives of people, it has not really mattered how large or small the subgroups were. (Except for the technical problem that very small subgroups dropped out of our analysis because of sample limitations.)

But if policy and programs are to be targeted so that planners can begin to apply the insights gained from the prior analyses, it is wise to consider the matter of relative size of meaningful subgroups. Table 5.5 does that. It identifies people who are legally blind according to whether they have any other serious impairment and also by their general health status; it shows, in column A, the percentage who are employed within each of those subgroups; next, column B shows what percentage of all legally blind people are in the subgroups. The bottom half of Table 5.5 carries out the same analysis for people with other serious visual impairment.

(As a reminder, readers interested in the same analysis for the combined group of legally blind and other visually impaired can assume the results will be very similar to those for the group shown as Other Visually Impaired who constitute 80% of the combined group.)

Excellent/good health, poor employment rates. We saw before that good or poor health was a major factor in employment rates. Whether they are legally blind or other visually impaired, people in excellent/good health have notably higher rates of employment than those in fair health, and those in poor health have such low rates that it raises a question whether they should really be included on the workplan of vocational rehabilitation, at least until their health improves.

We also saw that whether someone has additional impairments to their visual impairment makes a similar, predictable difference in employment. Those results are reasserted in Table 5.5 (wherever the number of sample cases permits the appropriate comparisons). For example, the employment rate among legally blind people with no other impairment and in excellent/good health is 70% (see Column A). That group is, we trust, a vanguard; presumably, much can be learned from them to ease the way for others. However, they constitute only 18% of all legally blind people in the ages 18-69 (see Column B). By contrast, among legally blind people with multiple impairments and poor health, employment seems the wrong focus for services: only 1% are employed. For them, access to appropriate health care should, it seems, be the service priority. By coincidence, that contrast group also makes up 18% of people who are legally blind of working age.

Table 5.5
Employment (Phase 2) by Serious Visual Impairment Status for Subgroups Defined by Both Multiple Impairment and Health Status, Ages 18-69: U.S., 1994-95
(A. Percentage employed within each subgroup)
(B. Relative size of the subgroups as a percentage)

Serious Visual Impairment Status	Multiply vs. Singly Impaired	Health Status	(A) Percentage Employed	(B) Percentage of Total %
Legally Blind	Multiply Impaired	Excellent/Good Health	30%	41
		Fair health	19%	20
		Poor Health	1%	18
	Singly Impaired	Excellent/Good Health	70%	18
		Fair Health	*a*	2
		Poor Health	*a*	*b*
		Total	30%	99%
Other Visually Impaired	**Multiply vs. Singly Impaired**	**Health Status**	**(A) Percentage Employed**	**(B) Percentage of Total %**
	Multiply Impaired	Excellent/Good Health	56%	22
		Fair Health	23%	18
		Poor Health	12%	22
	Singly Impaired	Excellent/Good Health	73%	30
		Fair Health	45%	6
		Poor Health	*a*	1
		Total	44%	99%

Due to rounding, percentages may not add up to exactly 100%.

Note: *a* - Too few sample cases to analyze; *b* - less than 1%

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

Now the most interesting group from the point of view of targeting policy and practice — that is the group of legally blind people who are in excellent/good health *and* have multiple impairments: even though they have the health advantage, their employment rate is only 30%. By knowing both their health and their impairment status, we can infer that the issues affecting their low employment rate are the kinds that both the disability rights movement and rehabilitation try to address. And we also learn from Table 5.5 that this is the most sizeable of the subgroups in the legally blind population, making up 41% of the total. They present the greatest challenge and opportunity to make a difference in the overall employment rate of people who are legally blind.

Turning to a similar review of the data applying to people with other visual impairment, the message is not quite as dramatic — for example in the critical group with excellent/good health but with multiple impairments, the employment rate is somewhat higher but still clearly problematic: 56%, and the group is not relatively as large, only 22% of the population of people with serious visual impairment. However, here we should take into account that overall the visually impaired group is much larger than the group who are legally blind, so that substantial numbers of people can be helped when their employment needs are addressed in a targeted way.

Pinpointing the effects of age and health. We have noted that because of small sample size we could not examine the effect of age differences at the same time as both the health and impairment status characteristics.

We did, however, conduct a logistic regression analysis that helps to wrap up the picture.

Regression analysis is a statistical procedure designed to estimate the relative effect of each one of a set of factors on an outcome — in this case, the employment rate — while "controlling for" all the other factors. In future work with these data, we will conduct additional regression analyses.

The analysis reported here was conducted for the combined group of legally blind and other seriously visually impaired persons. The factors we used allow us to answer a lingering question: when we decided to leave behind in the analysis the typical demographic factors affecting employment (i.e., gender, race/ethnicity, education), and to concentrate only on age and health-related measures, did we do so at a cost to our understanding because those factors actually make as big a difference as age and health?

And the related question: When we consider that whole set of factors, do age and health *each* make a contribution to our understanding or, because age and health are related to each other, is most of the effect accounted for by age but not health, or vice-versa?

The results of logistic regression can be described in terms of odds. If all you knew about someone was that the person had a serious visual impairment, your odds of predicting the person's employment status would be the same as the employment rate for the whole group. How much better are your odds of predicting whether someone is employed by having information on each of the set of factors, that is, knowing the gender, the age group, health status, etc.? (See Appendix for a technical description of our logistic regression analyses.)

We found that the set of factors we used greatly increased our odds of predicting a visually impaired person's employment status, and that all the factors except gender made a better-than-chance improvement to our odds; race-ethnicity made a small difference; and education made a greater difference. But even knowing those factors, we found that age and health are each of outstanding importance to predicting employment in this group: seriously visually impaired people at ages 18-54 were a bit over 5 times more likely to be employed than

those in the older group. And people in excellent-to-good health were almost 5 times more likely than those in fair or poor health (we used just the two categories) to be employed.

With that assurance that the themes of this analysis can stand up as adding to the understanding that traditional analyses have explored in some depth, we turn to drawing out some conclusions and implications from the story that has unfolded through these chapters.

CHAPTER 6

Implications for Policy and Practice

The problem may be the problem. It is with good reason that strategic planners often restrain their clients from charging ahead to find creative solutions to whatever problem prompted the client to develop a plan.

(Imagine that the "client" in this hypothetical case is a coalition of organizations that specialize in blindness and low vision services and advocacy. Imagine, further, that the coalition has coalesced over widespread concern with the persistent low rate of employment among people with legal blindness or other serious visual impairment.)

What if the coalition leaders spend a lot of time and energy and motivation on what turns out to be an incorrect definition of the problem? Granted, it is unlikely that a group of leaders in the field, many with long experience, will be completely wrong in how they define the problems that face them and their constituency. On the other hand, for several reasons it is *very* likely that they will be somewhat off-center. Put more technically, it is very likely that they will not *specify* the problem correctly.

Why is it actually more likely than not that leaders will specify their field's problem incorrectly? If a problem has persisted, and if the leaders have been around for a long time, it is highly possible that problem-definitions relevant during the early stages of their career have shifted sufficiently to be out-of-date. Some leaders may recognize that, especially the younger ones, but most typically do not. For the present, all these points are speculations, not addressed by the data we analyzed.

Truly speculative and provocative is another, more intractable reason that problems are likely to be mis-specified. While it seems not to apply here, it should at least be considered. That is the possibility that, probably subconsciously, it is in the interests of certain people or organizations with power to hang on to the incorrect definition and possibly even to hang on to the problem. Perhaps the incorrect definition leads to solutions that can use the skills existing leaders have (this is closely related to the first reason). That interpretation of much of blindness rehabilitation in the late 1960s was the extremely controversial conclusion reached by Robert Scott in *The Making of Blind Men* (1969). Scott observed that some agencies, through the very process of rehabilitation they used, which was ostensibly directed to promoting "independence," taught clients a form of dependence ("learned helplessness") on the service system that was not inherent in their loss of ability to see. The growth of the consumer movement, solidified in legislative requirements for consumer involvement in designing their services, has presumably minimized that type of consequence of services.

But the *main* reason for incorrectly specifying the problem is more benign. It is that most societal problems worth devoting a great deal of attention to have been around a long time and are truly very complex and difficult to unravel.

By now, the reader has guessed that, in our view, the main way this analysis can be useful is to help specify a significant and certainly complex societal problem: limited participation in employment by blind and visually impaired people in the U.S. near the turn of the 21st century.

We do not see recommendations that directly address solutions to the employment problem in the analysis we have conducted. Perhaps others will. Rather, we hope that by contributing to better specification of the problem, we can help others develop workable

solutions.

Life stage and the two employment problems. There are different ways that societal problems can be mis-specified. One is to merge together a number of issues that should always be kept separate. This means beginning to talk about two or more distinct problems where it has been habitual to address one, more massive problem.

We believe that applies too frequently in the policy arena concerned with employment of blind and visually impaired people, although the components are more typically kept separate in the practice arena. The two (or more) problems pertain to distinct life stage and career stage issues.

Our analysis of age differences was intended to uncover only in the broadest of outlines whether and how life stage and related career stage differences shape the problems visually impaired persons face regarding participation in the workworld.

We were severely hampered in doing so by lack of data on age-at-onset of impairment. Nor did we on this first pass over the data delve into measures that do exist in NHIS-D; that seems worthwhile doing in further analysis in order to extract relevant information (e.g., questions about retirement, marital status, household composition, etc.).

Nevertheless, what we were able to see is that age is a very powerful indicator. It strongly hints that the employment situation holds different opportunity and appeal for people depending on the "end of the lifespan telescope" they are looking through -- peering at what work can mean and what barriers exist from the perspective of entry or early careers *versus* the perspective where retirement is a live option.

We do not mean to imply that the field of blindness services is ignorant of this fundamental set of facts. Recognition that job retention and career entry are very different rehabilitation challenges is clearly well-established.

But it is that very fact of a well-established set of distinctions in the practice sector of the field that sets the stage for our recommendation. Typically when "the problem" of employment is packaged for advocacy, the statistics apply to the whole age range. That implies that the average employment rate for those with severe visual impairment -- around 25-30% (Kirchner & Schmeidler, 1997; McNeil, 1997) is the rate for all working aged blind people.

If there really are at least two distinct problems from a lifespan perspective, the field should consistently present the data on employment rates separately for those at early and later stages of their potential worklife. We have seen (Table 3.3) that among people with serious visual impairment, including those who are legally blind, the employment rate was 54% among those aged 18-54 years, in sharp contrast to a rate of 22% among people 55-69 years old.

That one piece of information would be a weak basis to rest the argument about having distinct sets of employment issues, and having problems of widely different magnitude, depending on people's life stage. But our analysis suggested the importance of age and life stage in several ways. It showed that the age difference was linked to other factors of importance – especially the health issues that we will turn to shortly – but more importantly, the age difference also stood out as an operative factor in employment rates over and above the other factors.

This brief and still preliminary discussion of the implications of this study's findings about age differences in employment issues leads to a recommendation.

Recommendation: **Whenever statistics and other descriptions about employment of blind and visually impaired people are used in policy design and advocacy situations, they should be presented separately for younger, early career stage, and older, later career stage**

individuals.

We should educate decision-makers about the different magnitudes of the problems in broad age groups, and help them understand the fact that the age differences reflect in part the same life stage processes that affect the general public – because blind and visually impaired people have the same general life stage obligations and objectives as the general public, but also (further research should put a priority on this) reflect the different opportunities that people who became blind early in life have had to acquire specialized skills compared to those who lose their sight later in life.

Diagnosing the effects of health and multiple impairment. Another way that societal problems may be mis-specified is by leaving out an important factor, even though many other important factors have been identified for attention. We believe that type of "problem with the problem" applies to the inadequate attention that has been given to general health status in rehabilitation and in activism around the employment disadvantage of people who are blind or visually impaired.

By contrast, it has been recognized that multiple impairment is an important factor and needs greater attention in policy and practice. Not heeded to date has been the joint effect of health and multiple impairment. We showed in our final data presentation (Table 5.5) that there is an amazing span of employment status when those two factors are taken into account. At the extremes -- focusing now just on people who are legally blind although the same message applies when the larger visually impaired population is considered: people who are "only" legally blind and in excellent-to-good health had an employment rate of ***70%***. Those who are legally blind, also have one or more other impairments, and are in poor health, had an employment rate of ***1%***.

That kind of impact is not to be ignored, either in "diagnosing" the problem for the field of service delivery or in trying to explain to policy makers what is needed. But we have never seen employment data presented in terms of differing health status of people who are blind.

Recommendation. **The knowledge base on the health status and health care issues of people who are blind or visually impaired is still rudimentary, making that a priority for future research. But there is enough evidence now to urge that health status move on to the policy analysis agenda for those concerned about employment of blind and visually impaired people**.

In closing: How big is the problem anyway? Societal problems may be mis-specified in yet another way that seems to apply here, and is related to the previous ones – it is that the magnitude of the problem may be exaggerated or minimized, leading to possible misallocation of resources, but more insidiously, to the inability to judge when progress is being made, or conversely, ground is being lost in efforts at tackling the problem(s).

Although it will take further analyses of these data, and a chance to gather reactions from others, we believe that a useful application of this study will be to re-examine which subgroups of the blind and visually impaired population should be considered in monitoring (a) where the employment rate stands now, and (b) how it responds to policy and practice initiatives that are on the scene or will be devised in the near future. From the data we have reviewed in the above chapters, it seems that there are meaningful subgroups who should not be in the denominator of the rate (e.g., those in persistent poor health) – and others who have sometimes been left out but should definitely be in (e.g., people who are well accommodated on their jobs and may drop out

of some employment statistics because they are not counted as "limited in work").

Our closing note is the hope that the kind of statistical analysis that has been conducted and could be pursued much further in the NHIS-D goldmine of data, will be seen by others to be as exciting and useful as we feel it has been and believe it can be in the future.

REFERENCES

Barnartt, S. N., & Altman, B. M. (1997). Predictors of wages: Comparisons by gender and type of impairment. *Journal of Disability Policy Studies, 8*, 51-74.

Batavia, A. I. (1998). Unsustainable growth: Preserving disability programs for Americans with disabilities. In K. Rupp & D. C. Stapleton (Eds.), *Growth in disability benefits: Explanations and policy implications* (pp. 325-336). Kalamazoo, MI: W. E. Upjohn Institute for Employee Research.

Berkowitz, E. D. (1987). *Disabled Policy: America's programs for the handicapped.* New York: Cambridge University Press.

Chiang, Y-P., Bassi, L. J., & Javitt, J. C. (1992). Federal budgetary costs of blindness. *The Milbank Quarterly, 70*(2), 319-339.

Cohen, J. (1969). *Statistical power analysis for the behavioral sciences.* New York: Academic Press.

Elinson, L., Mauer, K., Maffeo, C., Verbrugge, L., Frey, W., Bethel, J., & Hur, R. (1998, November). Predicting work among persons with disabilities. *Public Health and Managed Care* (p. 141). Paper presented at the 126th Annual Meeting and Exposition of the American Public Health Association, Washington, DC.

Ferraro, K. F., & Farmer, M. M (1999). Utility of health data from social surveys: Is there a gold standard for measuring morbidity? *American Sociological Review, 164*(2), 303-315.

Fine, M., & Asch, A. (Eds.). (1988). *Women with disabilities: Essays in psychology, culture, and politics.* Philadelphia: Temple University Press.

Haber, L. (1970). Age and capacity devaluation. *Journal of Health and Social Behavior, 2.*

Kaye, H. S. (1998a). *Vocational rehabilitation in the United States* [Disability Statistics Abstract, (20)].Washington, DC: National Institute on Disability and Rehabilitation Research.

Kaye, H. S. (1998b). *Disability watch: The status of people with disabilities in the United States.* Volcano, CA: Volcano Press.

Kirchner, C. (1984). *Assessing the effects of vocational rehabilitation on disadvantaged persons: Theoretical perspectives and issues for research.* Presented at the Annual Meeting of the Western Social Science Association, San Diego, CA.

Kirchner, C. (1988). *Data on blindness and visual impairment in the U.S.* New York: American Foundation for the Blind.

Kirchner, C. (1995). Economic aspects of blindness and low vision: A new perspective. *Journal of Visual Impairment and Blindness, 89,* 506-513.

Kirchner, C. (1996). Looking under the street lamp: Inappropriate uses of measures just because they are there. *Journal of Disability Policy Studies, 7,* 77-90.

Kirchner, C. (1999). USABLE data report #2: Prevalence estimates for visual impairment: Cutting through the data jungle. *Journal of Visual Impairment and Blindness, 93,* 253-259.

Kirchner, C., Harkins, D., & Esposito, R. (1991). *Report from a study of issues and strategies toward improving employment of blind or visually impaired persons in Illinois.* New York: American Foundation for the Blind.

Kirchner, Johnson, G., & C., Harkins, D. (1997). Research to improve vocational rehabilitation: Employment barriers and strategies for clients who are blind or visually impaired. *Journal of Visual Impairment and Blindness, 91,* 377-392.

Kirchner, C., McBroom, L., Nelson, K., & Graves, W. (1992). *Lifestyles of employed legally blind people: A study of expenditures and time use.* Mississippi State: Mississippi State University, Rehabilitation Research and Training Center on Blindness and Low Vision.

Kirchner, C., & Peterson, R. (1979). Employment: Selected characteristics. In C. Kirchner (Ed.), *Data on blindness and visual impairment in the U.S.* (2nd ed., pp. 169-177). New York: American Foundation for the Blind.

Kirchner, C., & Peterson, R. (1980). Worktime, occupational status, and annual earnings: An assessment of underemployment. In C. Kirchner (Ed.), *Data on blindness and visual impairment in the U.S.* (2nd ed., pp. 179-186). New York: American Foundation for the Blind.

Kirchner, C., & Schmeidler, E. (1997). Prevalence and employment of people in the United States who are blind or visually impaired. *Journal of Visual Impairment and Blindness, 91,* 508-511.

Kirchner, C., & Schmeidler, E. (1999). USABLE data report #3: Life chances and ways of life: Statistics on race, ethnicity, and visual impairment. *Journal of Visual Impairment and Blindness, 93,* 319-324.

Kirchner, C., Simon, Z., & Stern, H. (1985). Career planning and visually impaired students. *Journal of College Placement,* 53-56.

Koestler, F. (1976). *The unseen minority: A social history of blindness in the United States.* New York: David McKay Company.

LaPlante, M. P., & Carlson, D. (1996). *Disability in the United States: Prevalence and causes, 1992* (Disability Statistics Report 7). Washington, DC: U.S. Department of Education, National Institute on Disability and Rehabilitation Research.

LaPlante, M. P., Rice, D. P., & Wenger, B. L. (1995). *Medical care use, health insurance, and disability in the United States.* (Disability Statistics Abstract 8) Washington, DC: U.S. Department of Education, National Institute on Disability and Rehabilitation Research.

Mashaw, J. L., & Reno, V. R. (Eds.). (1996). *Balancing security and opportunity: The challenge of disability income policy.* Washington, DC: National Academy of Social Insurance.

Max W., Rice, D. P., & Trupin, L. (1996). *Medical expenditures for people with disabilities* [Disability Statistics Abstract, (12)]. Washington, DC: National Institute on Disability and Rehabilitation Research.

McNeil, J. M. (1993). *Americans with disabilities: 1991-92* (U.S. Bureau of the Census, Current Population Reports, P70-33). Washington, DC: U.S. Government Printing Office.

McNeil, J. M. (1997). *Americans with disabilities: 1994-95* (U.S. Bureau of the Census, Current Population Reports, P70-33). Washington, DC: U.S. Government Printing Office.

Moore, J. E., Crudden, A., & Giesen, J. M. (1994). *The 1994 survey of direct labor workers who are blind and employed by NIB affiliated industries for the blind.* Mississippi State: Mississippi State University, Rehabilitation Research and Training Center on Blindness and Low Vision.

National Advisory Eye Council. (1998). *Vision research–A national plan: 1999-2003* (NIH Publication No. 98-4120). Bethesda, MD: Author.

National Center for Health Statistics. (1998). [Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994]. Unpublished raw data.

National Center for Health Statistics. (1998). [Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1995]. Unpublished raw data.

National Council on Disability. (1996). *Achieving independence: The challenge for the 21st century: A decade of progress in disability policy: Setting an agenda for the future.* Washington, DC: Author.

Partos, F., & Kirchner, C. (1986). *The Randolph-Sheppard Business Enterprise Program: Program characteristics.* In C. Kirchner (Ed.), *Data on blindness and visual impairment in the U.S.* (2nd ed., pp.337-348). New York: American Foundation for the Blind.

Pope, A. M., & Tarlov, A. R. (Eds.). (1991). *Disability in America: Toward a national agenda for prevention.* Washington, DC: National Academy Press.

Quinn, P. (1998). *Understanding disability: A lifespan approach*. Thousand Oaks, CA: Sage Publications.

Rice, D. P., & LaPlante, M. P. (1992). Medical expenditures for disability and disabling comorbidity. *American Journal of Public Health, 82*(5), 739-741.

Rupp, K., & Stapleton, D. C. (Eds.). (1998). *Growth in disability benefits: Explanations and policy implications.* Kalamazoo, MI: W.E. Upjohn Institute for Employee Research.

Safilios-Rothschild, C. (1970). *The sociology and social psychology of disability and rehabilitation.* New York: Random House.

Scott, R. (1969). *The making of blind men: A study of adult socialization.* News Brunswick, NJ: Transaction, Inc.

Smith, K. E., & Bachu, A. (1999). *Women's labor force attachment patterns and maternity leave: A review of the literature (*Population Division Working Paper No. 32). Washington, DC: U.S. Bureau of the Census, Population Division.

Social Security Administration & U.S. Department of Education. (1996, October-November). *Employment and return to work for people with disabilities.* [Proceedings of a conference].Washington, DC: Author.

Stoddard, S., Jans, L., Ripple, J., & Kraus, L. (1998). *Chartbook on work and disability in the United States, 1998* (An InfoUse Report). Washington, DC: U.S. National Institute on Disability and Rehabilitation Research.

Tielsch, J. M., (1994). *Vision Problems in the U.S.: A report on blindness & vision impairment in adults age 40 and older prepared by Prevent Blindness America.* Schaumburg, IL: Prevent Blindness America.

Todorov, A. (1999). *Context effects in national health surveys: Effects of preceding questions on reporting serious difficulty seeing and legal blindness.* Paper submitted for publication.

Trupin, L., & Rice, D. (1995). Health status, medical care use, and number of disabling conditions in the United States. *Disability Statistics Abstract,* (9).

U.S. Bureau of the Census. (1997*). Statistical abstract of the United States: 1997.* Washington, DC: Author.

U.S. Department of Labor. (1995). *Report on the American workforce.* Washington, DC: U.S. Government Printing Office.

United States General Accounting Office. (1999). *Multiple factors affect return to work* (GAO/T-HEHS-99-82). Washington, DC: Author.

Valdés, K. A., Williamson, C. L., & Wagner, M. M. (1990). The national longitudinal transition study of special education students (Contract 300-87-0054). Menlo Park, CA: SRI International.

Wolfe, B. (1998). Comments on chapter 3. In K. Rupp & D. C. Stapleton (Eds.), *Growth in disability benefits: Explanations and policy implications* (pp. 135-138). Kalamazoo, MI: W. E. Upjohn Institute for Employment Research.

Wolffe, K. (1996). Career education for students with visual impairments. *RE:view, 28* (2), 89-93.

Wunderlich, G. (Ed.). (1999). *Measuring functional capacity and work requirements: Summary of a workshop*. Washington, DC: National Academy Press.

Yelin, E. (1992). *Disability and the displaced worker*. New Brunswick, NJ: Rutgers University Press.

Yelin, E. (1996, November). The labor market and persons with and without disabilities: Analysis of the 1993 through 1995 current population surveys. Proceedings from the conference *Employment and Return to Work for People with Disabilities* sponsored by the Social Security Administration and the U.S. Department of Education, Washington, DC.

Yelin, E., & Katz, P. (1994). Labor force trends of persons with and without disabilities. *Monthly Labor Review, 117*(10), 36-42.

Yelowitz, A. S. (1998). The impact of health care costs and Medicaid on SSI participation. In K. Rupp & D. C. Stapleton (Eds.), *Growth in disability benefits: Explanations and policy implications* (pp. 109-133). Kalamazoo, MI: W. E. Upjohn Institute for Employment Research.

Young, J. M. (1997). *Equality of opportunity: The making of the Americans with Disabilities Act*. Washington, DC: National Council on Disability.

Appendix A

Weighted and Unweighted Base Numbers for Tables

Table 3.1A **Labor Force Status by Impairment Status, Ages 18-69 Years: U.S., 1994-95** *(Base Numbers in Thousands - Weighted)*			
	"General Public" (with **No** Serious Impairments)	People With Serious **Visual** Impairment	People With Serious **Non-Visual** Impairments
TOTAL	**140,293**	**2,594**	**25,979**

Table 3.1B **Labor Force Status by Impairment Status, Ages 18-69 Years: U.S., 1994-95** *(Base Numbers - Not Weighted)*			
	"General Public" (with **No** Serious Impairments)	People With Serious **Visual** Impairment	People With Serious **Non-Visual** Impairments
TOTAL	**106,045**	**2,067**	**19,889**

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

Table 3.2A **Major Life Role by Impairment Status and Employment (Phase 1): U.S., 1994 - 95** *(Weighted Base)*			
	"General Public" (With **No** Serious Impairments)	People With Serious **Visual** Impairment	People With Serious **Non-Visual** Impairments
O. Employed (Phase 1)	108,739	1,091	13,165
B. Not Employed (Phase 1)	30,912	1,487	12,694

Table 3.2B **Major Life Role by Impairment Status and Employment (Phase 1): U.S., 1994 - 95** *(Not Weighted Base)*			
	"General Public" (With **No** Serious Impairments)	People With Serious **Visual** Impairment	People With Serious **Non-Visual** Impairments
A. Employed (Phase 1)	81,269	835	9,807
B. Not employed (Phase 1)	24,269	1,216	9,986

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

Table 3.3A
Employment (Phase 1) by Impairment Status and Detailed and Broad Age Groups: U.S., 1994-95
(Base Numbers in Thousands - Weighted)

P. "General Public" (With **No** Serious Impairments)

18 - 21 Years	22 - 49 Years	50 - 54 Years	55 - 59 Years	60 - 64 Years	65 - 69 Years	18 - 54 Years	55 - 69 Years
12,537	96,308	10,239	7,995	6,898	6,316	119,084	21,209

Q. People With Serious **Visual** Impairment

18 - 21 Years	22 - 49 Years	50 - 54 Years	55 - 59 Years	60 - 64 Years	65 - 69 Years	18 - 54 Years	55 - 69 Years
94	1,228	286	272	332	382	1,608	986

R. People With Serious **Non-Visual** Impairments

18 - 21 Years	22 - 49 Years	50 - 54 Years	55 - 59 Years	60 - 64 Years	65 - 69 Years	18 - 54 Years	55 - 69 Years
1,266	13,746	2,723	2,500	2,744	3,000	17,734	8,245

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

Table 3.3B
Employment (Phase 1) by Impairment Status and Detailed and Broad Age Groups: U.S., 1994-95
(Base Numbers - Not Weighted)

S. "General Public" (With **No** Serious Impairments)							
18 - 21 Years	22 - 49 Years	50 - 54 Years	55 - 59 Years	60 - 64 Years	65 - 69 Years	18 - 54 Years	55 - 69 Years
8,926	72,286	7,995	6,307	5,478	5,053	89,207	16,838
T. People With **Serious** Visual Impairment							
18 - 21 Years	22 - 49 Years	50 - 54 Years	55 - 59 Years	60 - 64 Years	65 - 69 Years	18 - 54 Years	55 - 69 Years
68	929	233	228	281	328	1,230	837
U. People With Serious **Non-Visual** Impairments							
18 - 21 Years	22 - 49 Years	50 - 54 Years	55 - 59 Years	60 - 64 Years	65 - 69 Years	18 - 54 Years	55 - 69 Years
877	10,322	2,146	1,989	2,151	2,404	13,345	6,544

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

Table 3.4A
Employment (Phase 1) by Gender, Race, Ethnicity, and Education Within Broad Age Groups and by Impairment Status: U.S., 1994-95
(Base Numbers in Thousands - Weighted)

V. "General Public" (With No Serious Impairments)								
Gender	18 - 54 Years	55 - 69 Years	***Race/ Ethnicity***	18 - 54 Years	55 - 69 Years	***Education***	18 - 54 Years	55 - 69 Years
Women	60,760	11,566	**White, Non-Hispanic**	86,173	17,354	**Less than H.S. Graduation**	15,149	4,599
Men	58,326	9,643	**Other**	32,912	3,855	**H.S. Grad or Some College**	73,570	12,157
						College Grad or More	29,663	4,271
W. People With Serious Visual Impairment								
Gender	18 - 54 Years	55 - 69 Years	***Race/ Ethnicity***	18 - 54 Years	55 - 69 Years	***Education***	18 - 54 Years	55 - 69 Years
Women	849	540	**White, Non-Hispanic**	1,156	683	**Less than H.S. Graduation**	448	450
Men	759	446	**Other**	452	304	**H.S. Grad or Some College**	953	434
						College Grad or More	193	94
X. People With Serious Non-Visual Impairments								
Gender	18 - 54 Years	55 - 69 Years	***Race/ Ethnicity***	18 - 54 Years	55 - 69 Years	***Education***	18 - 54 Years	55 - 69 Years
Women	8,683	4,040	**White, Non-Hispanic**	13,573	6,690	**Less than H.S. Graduation**	3,890	2,913
Men	9,050	4,205	**Other**	4,159	1,555	**H.S. Grad or Some College**	10,802	4,151
						College Grad or More	2,880	1,112

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

Table 3.4B
Current Employment by Gender, Race, Ethnicity, and Education Within Broad Age Groups and by Impairment Status: U.S., 1994-95
(Base Numbers - Not Weighted)

Y. "General Public" (With No Serious Impairments)

Gender	18 - 54 Years	55 - 69 Years	*Race/ Ethnicity*	18 - 54 Years	55 - 69 Years	*Education*	18 - 54 Years	55 - 69 Years
Women	47,040	9,304	**White, Non-Hispanic**	60,776	13,064	**Less than H.S. Graduation**	12,878	3,915
Men	42,168	7,534	**Other**	28,432	3,774	**H.S. Grad or Some College**	54,406	9,542
						College Grad or More	21,350	3,225

Z. People With Serious Visual Impairment

Gender	18 - 54 Years	55 - 69 Years	*Race/ Ethnicity*	18 - 54 Years	55 - 69 Years	*Education*	18 - 54 Years	55 - 69 Years
Women	677	465	**White, Non-Hispanic**	825	529	**Less than H.S. Graduation**	354	397
Men	553	372	**Other**	405	308	**H.S. Grad or Some College**	717	353
						College Grad or More	146	78

AA. People With Serious Non-Visual Impairments

Gender	18 - 54 Years	55 - 69 Years	*Race/ Ethnicity*	18 - 54 Years	55 - 69 Years	*Education*	18 - 54 Years	55 - 69 Years
Women	6,760	3,267	**White, Non-Hispanic**	9,720	5,025	**Less than H.S. Graduation**	3,104	2,412
Men	6,584	3,277	**Other**	3,624	1,519	**H.S. Grad or Some College**	8,007	3,242
						College Grad or More	2,103	832

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

Table 3.5A
Social Characteristics of People Aged 18 - 69 by Impairment Status: U.S., 1994 - 95
(Base Numbers in Thousands - Weighted)

		"General Public" (With **No** Serious Impairments)	People With Serious **Visual** Impairment	People With Serious **Non-Visual** Impairments
BB.	***Age in Detailed***	140,294	2,594	25,978
	Age in Broad Groups	140,294	2,594	25,978
CC.	***Gender***	140,294	2,594	25,978
DD.	***Race/Ethnicity***	140,294	2,594	25,978
EE.	***Education***	139,408	2,573	25,747

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

Table 3.5B Social Characteristics of People Aged 18 - 69 by Impairment Status: U.S., 1994 - 95 *(Base Numbers - Not Weighted)*			
	"General Public" (With **No** Serious Impairments)	People With Serious **Visual** Impairment	People With Serious **Non-Visual** Impairments
FF. ***Age in Detailed***	106,046	2,067	19,888
Age in Broad	106,046	2,067	19,888
GG. ***Gender***	106,046	2,067	19,888
HH. ***Race/Ethnicity***	106,046	2,067	19,888
II. ***Education***	105,316	2,045	19,700

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

Table 4.1A
The Employment Connection (Employment, Full-time/Part-time; Ever/Never Worked) by Serious Visual Impairment Status and Age: U.S., 1994-95
(Base Numbers in Thousands - Weighted)

	People with Serious Visual Impairment			People Who Are Legally Blind			People With Serious Visual Impairment, (Excluding Legally Blind)		
Employment (Phase 2)	All Ages	18 - 54 Years	55 - 69 Years	All Ages	18 - 54 Years	55 - 69 Years	All Ages	18 - 54 Years	55 - 69 Years
Total	2,523	1,588	935	533	345	188	1,990	1,242	747

Table 4.1B
The Employment Connection (Employment, Full-time/Part-time; Ever/Never Worked) by Serious Visual Impairment Status and Age: U.S., 1994-95
(Base Numbers - Not Weighted)

	People with Serious Visual Impairment			People Who Are Legally Blind			People With Serious Visual Impairment, (Excluding Legally Blind)		
Employment (Phase 2)	All Ages	18 - 54 Years	55 - 69 Years	All Ages	18 - 54 Years	55 - 69 Years	All Ages	18 - 54 Years	55 - 69 Years
Total	1,581	939	642	331	201	130	1,250	738	512

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

Table 4.2A
Self-Reported "Work Limitation" Due to Health or Disability Among People Who Are Legally Blind, by Social Characteristics: U.S., 1994-95
(Base Numbers in Thousands - Weighted)

	Total
All	574
Gender	
Men	327
Women	247
Age	
18 - 21 years	27
22 - 49 years	264
50 - 54 years	78
55 - 59 years	60
60 - 64 years	80
65 - 69 years	64
Race / Ethnicity	
Non-Hispanic White	410
Other	164
Education	
Less than High School	194
High School Graduate / Some College	308
College Graduate or More	69

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

Table 4.2B Self-Reported "Work Limitation" Due to Health or Disability Among People Who Are Legally Blind, by Social Characteristics: U.S., 1994-95 *(Base Numbers - Not Weighted)*	
	Total
All	446
Gender	
Men	236
Women	210
Age	
18 - 21 years	19
22 - 49 years	196
50 - 54 years	58
55 - 59 years	52
60 - 64 years	65
65 - 69 years	56
Race / Ethnicity	
Non-Hispanic White	295
Other	151
Education	
Less than High School	153
High School Graduate / Some College	235
College Graduate or More	54

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

Table 4.3A
Receipt of Vocational Rehabilitation by Serious Visual Impairment Status, Age, and Employment: U.S., 1994-95
(Base Numbers - in Thousands - Weighted)

	People who are Legally Blind		People with Serious Visual Impairment, (Excluding Legally Blind)	
Employment (Phase 2)	18 - 54 Years	55 - 69 Years	18 - 54 Years	55 - 69 Years
Employed	144	17	732	148
Not Employed	201	171	310	598

Table 4.3B
Receipt of Vocational Rehabilitation by Serious Visual Impairment Status, Age, and Employment: U.S., 1994-95
(Base Numbers - in Thousands - Not Weighted)

	People who are Legally Blind		People with Serious Visual Impairment, (Excluding Legally Blind)	
Employment (Phase 2)	18 - 54 Years	55 - 69 Years	18 - 54 Years	55 - 69 Years
Employed	89	12	422	97
Not Employed	112	118	316	415

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

Table 4.4A **Major Life Role by Serious Visual Impairment Status and Age: U.S., 1994-95** *(Base Numbers - in Thousands - Weighted)*				
	People Who Are Legally Blind		People With Serious Visual Impairment, (Excluding Legally Blind)	
	18 - 54 Years	55 - 69 Years	18 - 54 Years	55 - 69 Years
Total	349	188	1,267	754

Table 4.4B **Major Life Role by Serious Visual Impairment Status and Age: U.S., 1994-95** *(Base Numbers - Not Weighted)*				
	People Who Are Legally Blind		People With Serious Visual Impairment, (Excluding Legally Blind)	
	18 - 54 Years	55 - 69 Years	18 - 54 Years	55 - 69 Years
Total	204	130	751	518

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

Table 4.5A
Rate of Volunteering By Visual Impairment Status, Age, and Major Life Roles: U.S., 1994-95
(Base Numbers - in Thousands - Weighted)

	People Who Are Legally Blind		People With Serious Visual Impairment, (Excluding Legally Blind)	
	18 - 54 Years	55 - 69 Years	18 - 54 Years	55 - 69 Years
Total	349	188	1,267	754

Table 4.5B
Rate of Volunteering By Visual Impairment Status, Age, and Major Life Roles: U.S., 1994-95
(Base Numbers - Not Weighted)

	People Who Are Legally Blind		People With Serious Visual Impairment, (Excluding Legally Blind)	
	18 - 54 Years	55 - 69 Years	18 - 54 Years	55 - 69 Years
Total	204	130	751	518

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

Table 5.1A **Employment Rates (Phase 2) by Serious Visual Impairment Status and Health Status, Ages 18-69; U.S. 1994 - 1995** *(Base Numbers in Thousands -Weighted)*		
Health Status	People Who Are Legally Blind	People With Serious Visual Impairment, (Excluding Legally Blind)
Excellent/Good	316	1,036
Fair	116	485
Poor	98	462

Table 5.1B **Employment Rates (Phase 2) by Serious Visual Impairment Status and Health Status, Ages 18-69; U.S. 1994 - 1995** *(Base Numbers - Not Weighted)*		
Health Status	People Who Are Legally Blind	People With Serious Visual Impairment, (Excluding Legally Blind)
Excellent/Good	187	633
Fair	80	307
Poor	62	305

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

Table 5.2A
Health Status by Serious Visual Impairment Status and Age: U.S., 1994-95
(Base Numbers in Thousands - Weighted)

	People Who Are Legally Blind			People With Serious Visual Impairment, (Excluding Legally Blind)		
	All Ages	18-54 Years	55-69 Years	All Ages	18-54 Years	55-69 Years
Health Status—Total	530	344	186	1,983	1,237	746

Table 5.2B
Health Status by Serious Visual Impairment Status and Age: U.S., 1994-95
(Base Numbers in Thousands - Not Weighted)

	People Who Are Legally Blind			People With Serious Visual Impairment, (Excluding Legally Blind)		
	All Ages	18-54 Years	55-69 Years	All Ages	18-54 Years	55-69 Years
Health Status—Total	329	200	129	1,245	734	511

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

Table 5.3A
Employment Status (Phase 2) by Serious Visual Impairment, Age, and Health Status: U.S., 1994-95
(Base Numbers in Thousands - Weighted)

	People Who Are Legally Blind		People With Serious Visual Impairment, (Excluding Legally Blind)	
Health Status	18-54 Years	55-69 Years	18-54 Years	55-69 Years
Excellent to Good	226	90	759	277
Fair	68	47	251	234
Poor	49	49	227	235

Table 5.3B
Employment Status (Phase 3) by Serious Visual Impairment, Age, and Health Status: U.S., 1994-95
(Base Numbers - Not Weighted)

	People Who Are Legally Blind		People With Serious Visual Impairment, (Excluding Legally Blind)	
Health Status	18-54 Years	55-69 Years	18-54 Years	55-69 Years
Excellent to Good	129	58	437	196
Fair	44	36	154	153
Poor	27	35	143	162

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

Table 5.4A
Major Life Role by Serious Visual Impairment Status, Age, and Health Status: Ages 18-69: U.S. 1994-95
(Base Numbers in Thousands - Weighted)

People Who Are Legally Blind

	18-54 Years			55-69 Years		
Major Activity	Excellent/ Good	Fair	Poor	Excellent/ Good	Fair	Poor
Total	240	77	50	94	55	53

Table 5.4A
Major Life Role by Serious Visual Impairment Status, Age, and Health Status: Ages 18-69: U.S. 1994-95
(Base Numbers in Thousands - Weighted)

People With Serious Visual Impairment, (Excluding Legally Blind)

	18-54 Years			55-69 Years		
Major Activity	Excellent/ Good	Fair	Poor	Excellent/ Good	Fair	Poor
Total	742	253	235	287	229	261

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

Table 5.4B
Major Life Role by Serious Visual Impairment Status, Age, and Health Status: Ages 18-69: U.S. 1994-95
(Base Numbers - Not Weighted)

People Who Are Legally Blind

	18-54 Years			55-69 Years		
Major Activity	Excellent/ Good	Fair	Poor	Excellent/ Good	Fair	Poor
Total	176	60	35	72	53	47

Table 5.4B
Major Life Role by Serious Visual Impairment Status, Age, and Health Status: Ages 18-69: U.S. 1994-95
(Base Numbers - Not Weighted)

People With Serious Visual Impairment, (Excluding Legally Blind)

	18-54 Years			55-69 Years		
Major Activity	Excellent/ Good	Fair	Poor	Excellent/ Good	Fair	Poor
Total	560	201	190	234	201	225

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

Table 5.5A
Employment (Phase 2) by Serious Visual Impairment Status for Subgroups Defined by both Multiple Impaired and Health Status, Ages 18-69: U.S., 1994-95
(Base Numbers in Thousands - Weighted)

Serious Visual Impairment Status	Multiply vs. Singly Impaired	Health Status	
Legally Blind	Multiply Impaired	Excellent/Good Health	220
		Fair health	107
		Poor Health	98
	Singly Impaired	Excellent/Good Health	97
		Fair Health	a
		Poor Health	a
		Total	530

Other Visually Impaired	Multiply vs. Singly Impaired	Health Status	
	Multiply Impaired	Excellent/Good Health	434
		Fair Health	357
		Poor Health	442
	Singly Impaired	Excellent/Good Health	602
		Fair Health	128
		Poor Health	a
		Total	1,983

Note: a - Too few sample cases to analyze

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

Table 5.5B
Employment (Phase 2) by Serious Visual Impairment Status for Subgroups Defined by both Multiple Impaired and Health Status Ages, 18-69: U.S., 1994-95
(Base Numbers - Not Weighted)

Serious Visual Impairment Status	Multiply vs. Singly Impaired	Health Status	
Legally Blind	Multiply Impaired	Excellent/Good Health	129
		Fair health	76
		Poor Health	61
	Singly Impaired	Excellent/Good Health	58
		Fair Health	a
		Poor Health	a
		Total	329

Other Visually Impaired	Multiply vs. Singly Impaired	Health Status	
	Multiply Impaired	Excellent/Good Health	278
		Fair Health	224
		Poor Health	292
	Singly Impaired	Excellent/Good Health	355
		Fair Health	83
		Poor Health	a
		Total	1,245

Note: a - Too few sample cases to analyze

Source: Data from National Center for Health Statistics (1998). Data File Documentation, National Health Interview Survey on Disability, Phase 1 and Phase 2, 1994 and 1995. Calculations and interpretations by AFB.

Appendix B

List of Acronyms

List of Acronyms

ADA - Americans with Disabilities Act

ADL - Activities of Daily Living

AFB - American Foundation for the Blind

CPS - Current Population Survey

GAO - U.S. General Accounting Office

HIS - Health Interview Survey

IADL - Instrumental Activities of Daily Living

IDEA - Individuals with Disabilities Education Act

MSU - Mississippi State University

NCHS - National Center for Health Statistics

NIDRR - National Institute on Disability and Rehabilitation Research

NHIS - National Health Interview Survey

NHIS-D - National Health Interview Survey - Disability Supplement

NOD - National Organization on Disability

RRTC - Rehabilitation Research and Training Center on Blindness and Low Vision

SIPP - Survey of Income and Program Participation

SSA - Social Security Administration

SSDI - Social Security Disability Insurance

VR - Vocational Rehabilitation

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